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A Discussion
ON
THE REPORT OF THE LUNACY COMMISSION (ENGLAND).

THE PROVISIONAL TREATMENT ORDER OF THE ROYAL COMMISSION.*

BY
GEORGE M. ROBERTSON, M.D.,
President of the Royal College of Physicians of Edinburgh, and Professor of Psychiatry in the University; President of the Section.

THE lunacy laws of England and of Scotland are in urgent need of amendment. The parent Act for Scotland dates back to 1857, since when great changes affecting its serviceableness have taken place in the social life of the country as well as in the scientific world. It, however, definitely recognizes the paramount position of the medical profession in the treatment of mental diseases, for under its provisions no layman or magistrate is called upon to interview the patient before he is placed in a mental hospital, and no layman or committee is held to be responsible for his removal when recovered. Medical men discharge these and all similar duties, and to this feature must be ascribed the success of the Scottish system. It has gained the confidence of the people; and in place of misgivings and suspicion, there is pride in our mental hospitals and in their management. No case of improper detention has ever been recorded in the law courts. The 1857 Act has served its day and generation well, and its principle of medical responsibility is in Scotland established for ever.

The principal Act for England was passed in 1890, and from the legal and administrative points of view it is a complete, logical, and accurately drafted instrument. Its very perfection in these respects has been a calamity to the person sick in mind. That the treatment of insanity is primarily a medical question, that insanity being a disease like other diseases must be treated and treated early if its cure is to be effected, were minor considerations in the framing of this Act. They were overshadowed by problems connected with the liberty of the subject and with the haunting fear of improper detention, which loomed so ominously in the minds of law-makers. Thus, as has happened so often, an Act designed for the welfare of the insane person has turned out in practice to be to his detriment; and laws enacted with the object of reducing the sum of human misery have, in fact, increased it.

The Recommendations of the Royal Commission.

The present is an opportune time to discuss the problems of lunacy legislation. A thorough and impartial inquiry by a Royal Commission has just been concluded and an exceptionally able report has been presented, pointing out existing defects and making valuable suggestions for the future. One gratifying and immediate result of the investigations made has been to allay all anxiety in the minds of reasonable people as to the improper detention of sane persons in mental hospitals in England. Such cases have not been found, and in future legislation should not be dominated, as it has been in the past, by suspicions and misgivings, which have done so much harm to the persons chiefly interested—namely, the patients.

The following are some findings of the Commission:

1. The Commission did not find a single case in which improper detention had been suffered.
2. Fifty years previously a Select Committee of the House of Commons had also reported the same absence of improper detention.
3. The stigma of certification is acutely felt both by patients and their relatives.
4. Certification should be the last resort and not a preliminary to treatment.
5. The present facilities for treatment without certification are on a very limited scale and need extensive development.
6. The problem of insanity is essentially a public health problem, to be dealt with on modern public health lines.
7. The keynote of the past has been detention; the keynote of the future should be prevention and treatment.

The problem before us is summed up by the Commission in the following paragraph:

> "The lunacy code should be recast with a view to securing that the treatment of mental disorder should approximate as nearly to the treatment of physical ailments as is consistent with the special safeguards which are indispensable when the liberty of the subject is infringed."

According to the Commission the basic classification of cases requiring mental treatment should be—the voluntary and the involuntary.

The arrangements suggested for voluntary treatment are on the whole satisfactory. This form of treatment will ultimately become by far the most popular, and already in the Scottish royal hospitals the admission of voluntary patients paying the higher rates of board amounts to two-thirds of the total number. As the principle of voluntary treatment meets with universal approbation, and differences of opinion exist only on matters of detail, discussion on this subject would serve no useful end at present and is therefore excluded.

With regard to involuntary patients three procedures are recommended by the Commission.

The simplest of these is the Emergency Order signed by a relative, or friend, or public official on one medical recommendation, which, be it noted, is not a certificate of insanity. This order remains in force for seven days. Nothing need be said regarding the emergency order, which is altogether satisfactory.

We now come to the two remaining procedures recommended by the Commission: the Provisional Treatment Order and the Reception Order. These two orders are obtained through the personal intervention of a layman. They differ in three respects.

To obtain the provisional treatment order, one doctor only is called in to advise, instead of two as in the reception order; secondly, the single doctor makes a recommendation in the provisional treatment order, while the two doctors give certificates of insanity in the reception order; and thirdly, the authority of the provisional treatment order lasts from one to six months only, while that of the reception order is indefinite in duration.

The Commission is to be congratulated on adopting the principle in the provisional treatment order that an insane patient whose recovery is expected may be detained and treated on the recommendation of a doctor, without being certified to be insane, thus relieving the patient and his relatives of the stigma of certification, which is felt by them so acutely.

The provisional treatment order is supported by the recommendation of one doctor only; this is a mistake, for in so important "a matter which is the most difficult, delicate, and indefinite in the whole range of medical practice," according to Mr. Justice McCardie, two doctors should without doubt be consulted. In every great profession there may be a weak or an unworthy member; doctors, like other human beings, suffer in health and may make mistakes or be deceived, but the possibility of two doctors falling simultaneously into one or other of these categories, or of acting in collusion is a very remote contingency. As a safeguard and as a second witness or observer merely, apart from the value of another medical opinion, the employment of a second doctor must meet with the approval of everyone. Light may be thrown on the failure to recommend two doctors by question 4055: "Do you think a second certificate of sufficient importance as a safeguard to justify the expense in pauper cases?" Two medical certificates have been employed in all pauper cases in Scotland, a much poorer country, for seventy years, and should be employed in England in all such cases as well. Moreover, the provisional order applies to private cases as well as to paupers. A niggardly economy where the liberty of the subject is concerned is indefensible, but it is particularly objectionable to the medical profession when the failure to employ a second

* A paper read in opening a discussion in the Section of Mental Diseases at the Annual Meeting of the British Medical Association in Edinburgh (Friday, July 22nd). Dr. H. C. Marr, a Commissioner of the Board of Control in Scotland, was in the chair.

doctor is, as we believe, partly responsible for the repeated visitations of a sick person by laymen, and these will certainly not make for economy.

Another very debatable point is the basis upon which the two classes of patient—namely, those to be placed under the provisional order, and those to be placed under the reception order respectively—are to be selected. This involves the question of prognosis, notoriously the most difficult and uncertain problem in psychiatry. It has to be solved in the first place by the general practitioner, who can scarcely be expected to have the necessary experience; and secondly, by the justice, who has had no medical training at all. The provisional treatment order applies to those cases only in which "there is a prognosis of early recovery"; and the reception order applies to those patients only who are not likely to recover within six months. Those who have already been under provisional treatment for six months naturally come under the second category.

The difficulty regarding prognosis may be illustrated by a recent experience. A very eminent surgeon treating a melancholic patient regarded the prognosis of the mental condition as hopeless, because the patient was intensely suicidal. A suicidal tendency is the most anxious symptom a patient can exhibit; but as regards prognosis it is of no more significance than an ingrowing toe-nail. The surgeon was astonished when he was told this truth, but he now knows better, for he saw the patient make a rapid recovery.

A justice under similar circumstances might very naturally make the same blunder and refuse to sign the provisional treatment order. It is obvious that prognostication and forecasting the date of recovery is not one of the easiest tasks in psychiatry, and should not have been selected in sorting out provisional treatment cases from reception order cases, even though it is desired, and very properly desired, that all patients who make early recoveries should receive the benefit of the provisional treatment order.

The happiest laws regulating practical affairs are not the fine product of a learning that flourishes in studies and in libraries; they are slowly fashioned by the friction of circumstance and the shock of facts in the rude school of experience. Were the recommendations of the Commission regarding involuntary patients passed into law every doctor would place every patient not hopelessly and incurably insane under the provisional treatment order. What experienced doctor will give a grave prognosis at the beginning of an obscure illness? If thirty-five years ago Sir Thomas Clouston objected to the name of "dementia praecox," simply because of the malign influence of a pessimistic nomenclature on the endeavours of the physician, what are we to think of the evil consequences of a serious prognosis given solemnly on oath as a preliminary to treatment? When remedies are forthcoming for incurable and fatal diseases like general paralysis of the insane, what doctor, in the early stage of any illness, in cold blood, is, in vulgar language, going "to throw up the sponge"? Every successful doctor is an optimist; to be anything else is fatal to the prospects of his patients and to his own success. Gloomy deans may have a vogue, but not gloomy doctors. A gloomy outlook injures the patient directly, and it also does so indirectly by depressing the relatives and by creating an atmosphere of anxiety. It may be safely assumed, if the recommendations of the Commission be passed into law, that every patient not a chronic or absolutely hopeless case will receive the benefit of the doubt and will be treated under the provisional treatment order. In other words, all recent and recoverable cases of mental disorder will be given the chance of recovering within six months without being certified and registered as lunatics—"an excellent thing." No harm is done if incurable cases by mistake also enjoy this privilege; for it is clearly better to err on the side of granting it to too many than to too few. The intolerable self-reproaches and the awkwardness of the situation of a family doctor who, under the reception order, certified as insane a patient who made a perfect recovery in the course of three or four months, may be left to the imagination.

There is no doubt the Commission had the Scottish Schedule G in mind when it designed the provisional treatment order, for the powers granted for six months under this schedule can be applied to the treatment of a patient when "the malady is not confirmed" and "with a view to his recovery." This condition is better expressed in Schedule G than in the recommendation of the Commission, for the intention can always be honestly remedial, however faintly hopeful the outlook, and there need be no strain placed on the conscience by a declaration on oath that recovery is likely to take place within six months, when the outlook is quite uncertain and when a definite diagnosis has not been made. Seeing that similar results can be obtained in a simpler, surer, and more honest way than by speculative prognosis and hazardous assessment of the date of recovery, it would be better to drop the dubious procedure of prognostication altogether and give every patient, not a chronic and absolutely hopeless case, the benefit of the provisional treatment order for six months, provided he be treated "with a view to recovery."

The Provisional Treatment Order.

After a patient has been treated under a provisional treatment order for six months and is not likely to recover soon, and in obviously incurable and chronic cases, full certification of insanity and a reception order is a procedure to which no objection can be taken, seeing that custodial and not remedial treatment is its main object. If a patient under a provisional order has not recovered within six months, but is expected to recover soon, it should be possible, with the approval of the Board of Control or other competent authority, to extend the duration of the provisional order to a year, or even longer.

We note, with profound regret, that the justice, a layman, must intervene personally in order that temporary medical treatment may be obtained under the provisional treatment order. Quasi-medical duties and responsibilities are also imposed upon him. Such a recommendation is astonishing in a report that records no case of improper detention and that breathes medical aspirations and professes therapeutic and preventive ideals on almost every page. It is clear from the evidence submitted to the Commission that unmedical legal procedures have in the past been the chief impediment to early treatment and have prohibited preventive measures altogether. The treatment to be given under the provisional treatment order is only temporary and is essentially remedial; it is quite different from that given under the reception order, which is unlimited and is predominantly custodial. There is therefore less reason for judicial intervention in the provisional treatment order than in the reception order, and this intervention would be still less necessary if two medical men were consulted instead of one.

The judicial authority, we are told, is employed for two reasons. First, as a safeguard against improper detention; and secondly, because it is a principle of English law that the liberty of the subject may not be infringed without the intervention of some judicial authority.

With regard to the first reason—namely, as a safeguard against improper detention—if improper detention ever happens it is never the result of malicious intention. So long as human nature remains as it is, and circumstances seem to conspire, mistakes may occur; but when we recall that miscarriages of justice, such as the Adolph Beck and the Edalgi cases, have occurred even in our courts of law, and that no cases comparable to them have occurred in our mental hospitals, then it must be admitted that the record of the medical profession is beyond all praise and one to be proud of. Further, when we consider that in Scotland for seventy years thousands of insane persons have been placed in mental hospitals without being seen by any magistrate, and that no case of improper detention has ever been found in our courts, it is clear that the honour and vigilance of the medical profession are no mean safeguards.

There is another safeguard not judicial, the value of which the Royal Commission does not appear to have realized—the medical appeal. The subject is in Scotland safeguarded against improper detention in an asylum,

and his liberty made almost impregnable, by the right of appeal to two independent doctors for examination. The judicial authority is the sheriff, whose strictly legal functions will be described later. He considers in private the written medical evidence only and makes no quasi-medical investigations himself, nor does he invade the privacy of the sick-room. His reception order is given wholly on the written opinions expressed by the two medical men first called in, but complete and speedy protection is afforded the patient, should these two have made a mistake, by the right of appeal to two independent doctors for examination. This right is enjoyed by the patient, by any relative, by any friend, by the sheriff, and by the General Board of Control, so the machinery can be easily set in motion and in many ways. A patient is detained in a mental hospital on the certificates of two doctors, and what two medical men have done, two others can undo, if wrong has been done or a mistake has been made. If the first opinions are confirmed by this independent and unbiased testimony, the opposition of all reasonable persons is silenced. No layman, no judge, no committee, not even the General Board of Control itself, can act independently of the opinions of these two independent medical men, who form the supreme and, for the time being, the final court of appeal. We thus have in Scotland a purely medical system that affords complete protection, that has stood the test of time, and that satisfies public opinion. The personal intervention of a justice is therefore not necessary as a safeguard against improper detention if this tribunal exists. An appeal is not made often, and obviously frivolous appeals are discouraged by the authorities. In Scotland a sum of £30 a year apparently suffices for the payment of those cases in which no other funds are available.

In the second place, it is stated that it is a principle of English law that the liberty of the subject may not be infringed without the intervention of some judicial authority.

The Judicial Authority.

The object of the lunacy law is to authorize violations of personal freedom for the benefit of the patient and others under certain circumstances and formalities. Between 1845 and 1890 we were informed, on the authority of Dr. J. C. Bucknill, Lord Chancellor's Visitor, that

> "any one of the Queen's subjects may be deprived of his liberty, captured, confined, and detained by the proprietor of a licensed house or his servants, upon the order of any person whatsoever, either a British subject or an alien, either an adult or an infant, either a relative or a stranger, either an equal in social rank or a menial substitute; the only condition being that he has seen the alleged lunatic within one month of making the Order, and is supported by the certificates of two men qualified to practise and practising the medical profession."*

In spite of this absence of any judicial authority the Select Committee appointed in 1877 to inquire into the subject of improper detention under the law of 1845, reports: "Assuming that the strongest cases against the present system were brought before them, allegations of *mala fides* or of serious abuses were not substantiated." It would therefore seem that the infringement of the liberty of the subject without the intervention of a judicial authority is not without ample and striking precedent in the domain of mental disease, and that it was freely practised in England for forty-five years without the occurrence of serious abuses. It is still practised in Ireland without abuses arising.

Judicial intervention is not desired by the sick patient nor by his distressed relatives. It is quite alien to medical feeling. It creates difficulties, it adds complications, and it causes delay at a time of great trouble and unhappiness. If there must be some form of judicial intervention, then the Scottish procedure has much to recommend it. It preserves the integrity of the medical ideal, it respects the sanctity of the home, and it introduces the judicial element in a purely legal capacity. The sheriff, who signs the reception order, is an experienced barrister and a salaried judge. He never sees the patient; he does not make any quasi-medical examination. The application and medical certificates are presented to him, and if these be in order, and if the facts observed by the doctors indicating insanity satisfy him, he invariably signs the order. No one could discharge these duties better than this highly trained official, no legal intervention could be less objectionable than the one he follows, yet the question arises, Is judicial intervention necessary?

Judicial intervention in Scotland is quite superfluous. The inspection of the application to see that everything is in order and the examination of the medical certificates to discover if they truly indicate insanity, which is all that the sheriff does, are in every case as carefully performed by the General Board of Control as by the sheriff. If an order must be signed by a fourth party, there is no reason why it should not be signed by the General Board of Control, and the sheriff allowed to drop out altogether. The sheriff is only a fifth wheel to the coach. It is more appropriate that a permanent body that has medical as well as legal members on its staff, that is competent to examine patients as well as to scrutinize legal documents and weigh written evidence, should perform the duty of signing the order. This was the view held at one time by the General Board of Lunacy of Scotland, and the Royal Commission contemplates that ultimately it may be that "the participation of a magistrate will no longer be considered necessary."

Let us now dramatize the procedure which has been recommended by the Royal Commission before a sick man can obtain medical treatment for his illness. The proceedings are not medical, for a layman is the presiding authority. The stage on which they are enacted is a distracted household, for nothing upsets a family so much, not even excepting death, as the occurrence of insanity in one of its members. Their only consolation is the comforting and encouraging words of the family doctor. The application is signed, not without perturbation, the recommendation filled in, and now word is hurriedly sent to the justice. Within seven days this strange official, who is not a doctor, comes to interview the sick patient. He is recommended to visit the patient in the patient's own home, and this, in the country, involves an expedition. His medical examination is to be no perfunctory performance, as was so often the case in the past. As those justices who have a natural or acquired gift for this delicate duty are to be selected, it may be assumed without offence that all do not possess the necessary accomplishments. Then the relatives are to be interviewed, and, if this be judicially done, both those "for" and those "against." The kinsmen of patients are often trying, and some are to be met who refuse ever to see any signs of insanity, because they say there has never been any in their family. If the justice be in doubt, he is to confer with the doctor, so he as well as the relatives have to put their time at the disposal of the justice, however inconvenient this may be to all of them. More than one visit may be considered necessary.

The justice is now to exercise what has been described as "a directed discretion." For example, if delusions have been alleged he may deem it necessary to investigate these further, and how much further afield these may take him no one can tell. All sorts of inquiries may have to be set afoot and many witnesses interviewed. Then he has to decide whether the patient is to be informed of these allegations. To experts this is, perhaps, not a difficult decision to make—but how often has one been asked by a perplexed layman: "Doctor, should I agree with everything he says, and if I contradict him will he get excited?" This layman has, in addition, two medical problems placed upon him which he must solve by a personal examination and by his own discretion. He has to decide, first, "Is the patient insane or not?" And secondly, "If insane, is he going to recover within six months or not?" How a layman without any medical training or experience can answer the latter question it is impossible to conceive. If he has to rely on the doctor's opinions, and is guided by him, why bring him on to the stage at all? We will here drop the curtain on the first act of this drama.

The second act opens, after an interval of six months. The patient has not recovered, and the question of placing him under a reception order has to be considered. Two doctors are now called in to assist and give certificates of insanity. The justice may now have the assistance of the

* *The Care of the Insane and Their Legal Control*, p. xxx.

clerk to the justices. The patient may now appoint someone to represent his interests, and there is nothing to prevent him employing a solicitor whom he has found amenable to his instructions. The court is thus carefully and fully prepared for a formal hearing of the case, but the adoption of a forensic procedure is deprecated by the Commission. Apparently those who conduct these medico-legal proceedings are advised to drop, so far as they possibly can, judicial ceremonial ways and adopt the less alarming methods of the medical man in their place. The justice requires to see and examine the patient again, but no instructions are given as to whether the patient is to be present at this "trial" or not. If the solicitor, to earn his fee honourably, defends his client the patient can hardly with justice be excluded from the proceedings during all the time. Nor can the solicitor be denied such access and such facilities of getting up his client's case as he considers necessary, and this almost certainly would involve the evidence of other patients. Lively scenes, it may be surmised, will sometimes occur. Irresponsible allegations will at times be flung about, and the Commissioners have very wisely recommended that all parties must be sworn to secrecy. But there is one tongue over which they have no control, and possibly not even its owner can curb it—the tongue of the patient. We know how fond manic patients are of revelling in scurrilous and intimate disclosures, and how they love to pose before an audience.

It may be said that the picture here presented is overdrawn, but the more nearly judicial intervention is judicial in character the truer will the picture be to what will occur. The perfunctory way in which these duties were sometimes performed in the past, as by one-minute interviews in taxi-cabs, may possibly have been a saving grace. It is a pity that such disclosures did not lead logically to the abolition of judicial intervention, instead of to its reinforcement and rehabilitation.

Whether non-existent, as between 1845 and 1890, whether performed perfunctorily, as was so often the case in England, or whether performed in the purely legal way without seeing the patient, as in Scotland, judicial intervention or non-intervention seems to have made little difference one way or another, and neither Select Committee nor Royal Commission has found any person improperly detained in our mental hospitals. It is clear that adequate protection exists and is afforded by other means. To us in Scotland, who have never had any experience of the personal intervention of a layman, this form of amateur medicine seems a monstrous and intolerable invasion of the sphere of the physician, and nothing less than a caricature and a mockery of medical science and practice. The reason why the medical profession in England has acquiesced in it has been the hope that the personal intervention of the justice would relieve medical men of some responsibility and reduce or abolish the risk of legal actions. That hope has not been fulfilled, although, according to Mr. Justice McCardie, the medical certificate was no more than a mere opinion, devoid in itself of operative force, and the reception order was the effective authority.

Some Conclusions.

The provisional treatment order forms the most striking departure from precedent of all the recommendations contained in the Report of the Royal Commission. Voluntary treatment has existed for a long time, and no facilities are offered that are not already enjoyed in Scotland, where certifiable as well as rate-aided patients can be treated voluntarily. The emergency or urgency order has always existed, but it has been greatly improved by not requiring a statement to the effect that the patient is insane. The provisional treatment order is the offspring of Schedule G of Scotland, but it is a much greater concession, for Schedule G applies only to private patients. The Mental Treatment Bill associated together in one clause, somewhat incongruously, voluntary patients and patients without volition but non-resistant, and it was, of course, very desirable that special provisions should be made for the latter class. The provisional treatment order has done much more, for it has conferred the privileges it contains not only on patients of the class referred to, but also on volitional but resistant patients, provided they are deemed recoverable in six months' time. In effect, these privileges will apply to practically all cases of recoverable insanity. A greater boon cannot be expected of the legislature, and for it we have reason to be grateful to the Royal Commission. Its benefits will be much diminished, however, by the conditions under which they are to be conferred, and as we desire to see these faults removed, the five following recommendations are made:

1. In the first place, we consider that two doctors should require to give recommendations instead of one only. If the safeguarding of the liberty of the subject be so important a matter, the employment of two doctors instead of one should be acceptable. The power conferred by the provisional treatment order, although of limited duration, is great, and we think it should not be put into the hands of one medical man, even though a justice also sees the patient.

2. Secondly, as a further safeguard to the liberty of the subject, we recommend the right of appeal to be examined by two independent doctors. We believe this privilege will render improper detention almost impossible, as it has done in Scotland.

3. Thirdly, the employment of a second medical man and the right of appeal to two independent doctors, we believe, make it unnecessary for the judicial authority to visit and see the patient. In support of this we point to the results of seventy years' experience of this procedure in Scotland and think it conclusive. The visitation by the justice perpetuates those legal formalities that have in the past delayed treatment, blighted attempts at prevention, and differentiated mental disorders from other illnesses—all grave faults to overcome which were among the chief aims of the Commission.

4. Fourthly, we recommend that the justice be replaced by the Board of Control. It is a strong medico-legal body accustomed to visit patients, familiar with the requirements of the law, and actually engaged already as a part of its duties, in scrutinizing applications and medical certificates. Its task would be analogous to that performed at present by the sheriff in Scotland, which has proved very satisfactory, although he never sees the patient.

5. Finally, as prognosis and forecasting the date of recovery is difficult and uncertain, the conditions required for coming under the provisional treatment order should be altered to those of Schedule G—namely, that the malady is not confirmed and that the treatment to be given is with a view to recovery. This change would make no difference to the patients who would benefit, but it would confer a grateful relief to the physician.

When the remedial stage of the treatment of an insane person passes into the custodial, and the liberty of the subject, as distinct from his curative treatment, becomes the main question, no medical man can object to the adoption of such legal procedures as are considered necessary. It is again affirmed, in conclusion, that the right of appeal to be examined by two independent medical men is a more logical and perfect protection against improper detention than any form of personal intervention by a layman. It has proved a medico-legal panacea in Scotland for all problems dealing with the liberty of the subject in the treatment of mental disease.

DISCUSSION.

Dr. E. Mapother (Maudsley Hospital, London) considered that the Report of the Royal Commission was disappointing. It was to a large extent devoted to the prevention of non-existent abuses, and that in a rather inconsistent way. A great many of the recommendations were matters within the ordinary province of the Board of Control. He could not accept Professor Robertson's clear-cut distinction between the voluntary and involuntary case, and added that there was a third class of great importance, which included most of the recoverable cases. At the Maudsley Hospital, where voluntary cases were treated, it was assumed that if a patient had voluntarily placed himself under control and subsequently passed into a state in which he was not unwilling, but incapable of expressing his opinion, the consent to treatment which he gave

originally still held good; the Royal Commission, however, recommended that such a patient should be put under a provisional order. What was a provisional order under the new regulations except a certificate? Some method of dealing with the unwilling case other than by certification was needed—some method of treating such a case outside the asylum temporarily, and some order which was distinguishable from a certificate and did not involve the intervention of a magistrate. One of the many points of detail in which the provisional order or certificate seemed open to criticism was that a patient must be seen by a magistrate within seven days. A doctor might have to wait seven days before getting his patient seen by a magistrate, and that would tend to drive him in most cases to the use of the urgency order. The doctor's responsibility when he signed an urgency order was rather different from that involved in signing one of the certificates in support of a provisional order. He was in favour of having special certifying medical men for the giving of a certificate in connexion with a provisional order. In the Commissioners' report this was mentioned as an optional proposal; it was not made a definite recommendation. At the termination of validity of the provisional order, and when the order was to be followed by a definite reception order, the Commission stated that the patient should have the right to claim the attendance of any one person chosen by himself, and that the justice could be assisted by his clerk; elsewhere it was stated that the justice might call upon the medical man to justify his certificate. Dr. Mapother objected to the institution of a sort of trial before the patient was committed to a mental hospital; in this procedure the patient, but not the medical man, might be represented by counsel.

Dr. T. B. HYSLOP (London), whilst most heartily approving the Report of the Royal Commission and Professor Robertson's paper, doubted whether the new proposals would get to the bedrock of the troubles existing in England. The first duty of the medical man was towards his patient, the second towards the community, and the third to himself. To certify that a person was of unsound mind not only deprived him of his liberty and his social, economic, and civil rights, but branded him with a label which was borne by his relatives and descendants as well as by himself. The insanity might have been due to bodily causes, such as defects in the internal secretions, in metabolism, in excretions, or to toxins, and it behoved all medical men to consider whether they were to label their patients as coming within the mental or the physical category. Intervention of the judicial authority had not been entirely successful, either from the point of view of the liberty of the subject or the safety of the certifying practitioner. Both the patient and the medical man should be afforded a sporting chance of the former's recovery without deprivation of liberty. In his opinion the whole question was of such urgency and importance that he hoped there would not be unnecessary delay in bringing into effect the recommendations of the Royal Commission. In the meantime the community must suffer from the inadequate provisions for its welfare.

Dr. W. F. MENZIES (medical superintendent, Staffordshire Mental Hospital) deplored the decision of the Royal Commission to decline to recognize the non-volitional class of case. The suggested procedure involved three successive personal examinations of the patient by the judicial authority; this was impossible in practice. Justices could not give up one day a week to lunacy matters, certainly in any country district in England; nor could a dozen or more private medical practitioners leave their work and travel ten or twenty miles to the institution where the patient was placed, and wait about for a half-day until the case came on. Two medical certificates, one by the family doctor, the other by a medical officer of the institution, should be placed before the management committee at its monthly or weekly meeting, and it should be given, *ad hoc*, the powers of a judicial authority specially appointed under the Act. The vast bulk of the population were not apprehensive of improper detention; the whole agitation was fomented by a noisy minority, many of them unrecovered patients.

Dr. RISIEN RUSSELL (London) said that if England enjoyed the privileges available in Scotland for the treatment of mental disorder he would be content. The laws for England and Wales ought to be altered to allow of patients so affected being treated for at least a year without interference by the law, and certification ought to be the last resort. As the law now stood in England and Wales treatment was constantly hampered by the ever-present fear of conflict with the law, and the general practitioner was even more perplexed. Two distinct issues were engaging the attention of the profession and the public at the present time: (1) whether the doctor should have the whole "say" in the matter of certification of a person supposed to be of unsound mind, without legal intervention; (2) whether the doctor who certified a person as of unsound mind should be made immune against the possibility of a civil action for damages in a court of law for alleged wrongful certification. When the question was merely one relating to the treatment of a patient the profession was well within its rights in claiming to be the proper judges of what was required. When, however, it became a question of depriving an individual of his civil rights, the matter passed out of the sole province of medicine and became a legal one. The profession was fully justified in claiming protection against civil actions for damages in respect of alleged wrongful certification, but it could only reasonably hope to secure this protection if it was prepared to accept the interposition of a legal authority on whom the whole responsibility must fall. Moreover, if medical men were to expect the protection they claimed, it would seem to be reasonable that they must be prepared, in conformity with all other instances in which they were called upon to give evidence, to do so on oath. Even in so comparatively unimportant a matter as whether a man was drunk or sober, a doctor's certificate was not enough, but had to be supported in the witness-box. How much more should evidence on oath be required where the decision carried with it such grave consequences to the individual concerned and his family! A lasting damage was inflicted, which might have far-reaching consequences on other members of the family in respect to marriage, life insurance, and other matters. The suggestion that there should be the intervention of a representative of the law, who must in all instances personally see and examine the person supposed to be of unsound mind, did not carry with it the need for publicity, for the person in question need not appear in open court. It had been suggested that the legal representative should be a man trained both in medicine and law, and that there were, probably, a sufficient number of barristers with medical training to fill these posts. This seemed reasonable, but it might leave the matter too "medical," and the question should be viewed from different standpoints, hence the importance of having as justice a man with no medical training. The "welfare" of a patient might be a purely medical question, but his "safety," or that of the public, was also a matter for laymen. Important recommendations by the Royal Commission in regard to such inquiries were that the judicial authority should always see the patient, that the person whose case was being investigated should be at liberty to have a friend present, and that the justice should be called upon further to exercise what was termed a "directed discretion," which meant that he must consider and state his decision on the face of his order as to whether the allegations with regard to insanity were proved, whether he had seen the doctor, and whether the patient should be told of the allegations. The most important recommendation of the Commission in the interest of the patient was that which would allow of treatment without certification for at least a month, and possibly six months. How the urgency order was abused in many instances, and made use of as a convenience instead of being strictly reserved for cases of real urgency, had been so strongly brought out by evidence before the Commission that the provision for the interposition of a magistrate before the person was sent to an asylum was justified even in the case of an urgency order. The profession should welcome anything that would offer the public a sense of security in these matters, so long as what was suggested did not conflict with what was necessary for the good of

the patient. That one of the two medical certificates should be supplied by a doctor who possessed special knowledge of mental diseases was reasonable in the highest degree, if found practicable; he saw no objection to having doctors specially appointed under the Act to fulfil this function. In suggesting a way out of the present difficulties a threefold object should be kept in view—namely, to do what was best for the patient, what was acceptable to the public in conformity with the law, and what would give full protection to the doctor. The medical profession should try to find a reasonable solution that would fulfil these three objects. Dr. Russell, in conclusion, made a few suggestions as to how these three requirements would be best met: (1) that there should always be two doctors supplying the evidence, except in the very rare event of a case being of such urgency as to make this impracticable, and that one of these medical men should have special knowledge of mental diseases; (2) that the judicial authority should, in every case, see and examine the person supposed to be of unsound mind, and see also the doctors; (3) that in order to secure protection against civil actions, the doctors should give their evidence on oath, and be subjected to cross-examination like any other witness. What was of paramount importance was that medical men should be allowed to treat their patients who were mentally afflicted, without certification, away from asylums for six months at least, and, if possible, twelve.

Dr. Donald Ross (medical superintendent, Argyll and Bute Asylum) described the simple way in which some of the problems so pressing in this country were dealt with in the Canton du Valais, in Switzerland. In that canton there was a most admirable mental hospital, the Maison de Santé de Malévoz; Dr. Repond, the physician-superintendent, had said to him, "Thanks be to Heaven, we have no lunacy laws, no inspectors, no boards of control." This last was, of course, their loss, for in Scotland, at least, the General Board of Control was the ever-helpful comforter and friend of the profession. In Valais there was a very simple and workable code of rules for the guidance of the superintendent, drawn up by a former superintendent in collaboration with one of the members of the Cantonal Legislative Council. The admission and discharge of a patient was governed by the superintendent's opinion of the suitability of the case. If a patient, though not recovered, was sufficiently improved to go home, but the relatives were unwilling to take him out, the relatives were asked to pay a much higher rate of board, and this was usually quite effective. Dr. Risien Russell had spoken of the desirability of having specially trained physicians appointed as certifying physicians in lunacy. One of the speaker's recovered patients, from whom he had learnt much wisdom, always maintained that two medical certificates were desirable, and that while one should be, if possible, by the family physician—as all would agree—the second should be signed by a medical officer in a mental hospital, because, broadly speaking, he alone had the proper experience for the task.

Earl Russell (a member of the Royal Commission) said that the Commission had the advantage of hearing evidence from Dr. Robertson, by which it was much impressed, and it had also much admired the system he was able to administer. The Section must not think he undervalued the medical point of view, but when dealing with legislation and amendments to the law it was useless to discuss the matter purely from that aspect. Account must be taken of the attitude of the public—a thing a little overlooked in Professor Robertson's paper, but the Royal Commission had to bear it in mind. There were members on the Commission who held to some extent what he must call the antimedical view, and, whether it was still the effect of Charles Reade's book or not, there did exist in England, among the great mass of the population, a certain amount of suspicion of doctors, particularly of doctors in connexion with cases of insanity. The attitude of the House of Commons had to be remembered. That assembly represented, not only the intelligence, but the stupidity and the prejudices of the people. The duty of the Royal Commission, among other things, was not to consider merely the procedure for certification, important as that was, but also the happiness and well-being of that large body of patients who spent years under institutional treatment; regard had to be paid both to their comfort and their feelings—for example, in such matters as the sending out of letters to their friends under conditions of comparative privacy. Certification, of course, was an extraordinarily difficult question. He thought that many of them (presumably he was speaking of members of the Commission) would have been perfectly satisfied with the opinion, certainly of two medical men, if not in many cases of one medical man, but they had to consider the prejudices of the public, and the public's point of view was that the medical man was a person who was only too ready to certify, and without reason. The fact that the one object of the doctor was the treatment and benefit of his patient was not recognized in that simple form by the general public, which desired the intervention of a magistrate or some other judicial authority, who represented what they called the liberty of the subject. If the judicial authority could be dispensed with things would, no doubt, go on perfectly well; the real safeguard for patients in England was the Board of Control, which consisted of well informed people with ample powers and opportunities of inspection and control, who could perfectly well put an end to any improper detention. They were really of very much more use than any judicial authority. He regarded the suggestion made by Dr. Menzies that members of the mental hospital committee should be appointed the judicial authority as absolutely fatal. It would add to the suspicion already entertained that they were "all in the same gang." What was wanted was to satisfy someone from outside who was independent. He thought it undesirable also that the justice should be a person with medical knowledge. It was not the business of the justice to form a medical opinion, and it ought not to be his business. He had to consider the medical opinions which had been formed by competent people, and it was not for the justice to say from an entirely imperfect and incompetent medical diagnosis of his own whether a patient was sane or not. All he had to ensure was that care had been taken and the thing was in order. When the Commission referred to the "directed discretion" of the justice it rather meant that there were certain matters to which the justice ought to direct his attention as a matter of course in every examination he made and every certificate he gave—that is to say, he should not be left at large to perform his duties in a slovenly manner. The objections to anything like a public trial had been pointed out. There were the gravest objections to a public or a private trial in the ordinary forensic sense of the word. But the Commission received the strongest representations from those who claimed to speak on behalf of patients and ex-patients that they did desire, at some stage or other, to state their case. It was well known, of course, that the paranoic would state his case with great volubility, and it would not further matters; but it was felt that the less the proceedings took the form of anything like a forensic contest the better. It had been suggested that the voluntary patient should continue to be treated as a man who had no volition at all. That might be a lawyer's point of view, but when it was said that a man was doing a thing voluntarily it carried a certain obvious meaning, and a man was not doing a thing voluntarily if he did not know that he was doing it. If voluntary treatment was to be made really successful the public must not be frightened into it. It was true that a voluntary patient would have moments of rebellion, in which he would say he was not going to stand it any longer; and it was to meet those moments that a delay of seventy-two hours was suggested. If voluntary patients were to continue to be treated as such when they became non-voluntary the advantages of the voluntary system would be destroyed. He would be very glad if public opinion in England would allow much greater freedom in the treatment of the insane; certainly that would be to the advantage of the insane, but the prejudice of which he had spoken had to be remembered. If any contribution were to be made to legislation, when it came—and he agreed that there was no chance of it this year, and he feared no chance of it next year—this

prejudice would have to be reckoned with and improvements would have to be sought in a way which would not leave the medical man with complete control. With regard to the urgency order, it had been suggested that justices should always intervene before the patient was removed to an asylum. It was obvious that it was not always possible to wait for the justice to intervene before the patient was restrained. The patient in some cases had to be restrained instantly. The liberty of the subject was maintained by the provision that a doctor or justice must see the patient within three days, but instant restraint might have to be applied. He was rather of opinion that the urgency order was employed where it often was not necessary, and it was very important that the urgency order should not be abused, otherwise it might not be available for cases where it was properly wanted.

Sir DAVID DRUMMOND (also a member of the Commission) said that Lord Russell had fully and admirably expressed his own views. It had been a great pleasure to him that the Report of the Royal Commission had been on the whole so well received by bodies of professional opinion, but he was sorry the Commission had found itself unable to safeguard the position of the medical practitioner more than it had done in that report.

Sir FREDERICK WILLIS (Chairman, Board of Control, England and Wales) said that some scepticism had been expressed as to whether legislation was really in view, but he happened to know that the Government was quite seriously considering the matter, and the Minister of Health was anxious, during his term of office, to pass a new lunacy law. In view of this, he particularly welcomed the present discussion, which would be of assistance in formulating proposals or a memorandum for the Ministry. Politicians were necessarily governed by public opinion in these matters, and a Minister might well hesitate to put forward what seemed to him and his advisers the best course if he knew that owing to the attitude of the public it would be rendered impracticable to carry out. The public were still very superstitious, and to some extent had not got away from the view of lunacy which was held a hundred years ago. He was anxious to avoid all formalities in the treatment of the insane so far as this could be done, but though these legal formalities deterred people from getting treatment, this was not the whole deterrent. They were deterred also by the fear lest, should they once consult someone for mental illness, they might be locked up for the rest of their lives. The Royal Commission divided patients into two classes—the voluntary and involuntary. As to the voluntary there was nothing to be said. The Commission had recommended what a good many had urged for years—complete freedom. The Board of Control felt that patients ought to be divided into three classes—the voluntary, the involuntary, and the unwilling. The ground for this was the well known fact that people did not come sufficiently early for treatment. Indeed, under the lunacy law, the rate-aided case could not get treatment at all at the public expense until after certification. One of the proposals in the new Lunacy Bill would be to give lunacy authorities perfect liberty to arrange for early treatment, and, if the case was voluntary, without any justice coming in at all. He thought the Royal Commission might have gone even further in this direction, and so have done much to educate public opinion in regard to the early case. In his view adequate safeguards were forthcoming without the justice; the only reason for bringing in the justice was because the public believed that it was a measure of protection. The Board of Control recommended that involuntary patients in need of early treatment should be received into institutions or homes which the Board had previously approved as suitable places for giving such treatment, and that the Board should be immediately informed of the reception of such cases, and should have a right to visit the institution from time to time whenever it was thought necessary. Such safeguards, he thought, would be quite adequate. Under the present arrangement—he spoke as one who had seen a good deal of the work of the justices in connexion with this matter—he could not help thinking that there were no safeguards at all in a very large number of cases. If the safeguards were adequate to the treatment of these cases he did not see why the treatment need necessarily be limited to six months as the Royal Commission recommended. Many of these cases ran for eighteen months or two years. Why, if they were under proper treatment, with proper safeguards, should they not be allowed to remain on for that period? He did not quite see why any limit of time was needed. Another point which was exercising the minds of the Board was, What further protection should be given to the doctors? He had been very much distressed over some of the cases that had come recently into the courts. He could not help thinking that the jury, in England at least, was an absolutely unsuitable tribunal to test cases of this character. There was a notorious case in which, after a lapse of about twelve years, a trial took place lasting three weeks. Right through the trial it was obvious that the jury were in great sympathy with the patient—they were always against the doctor—and they decided that, twelve years ago, when the patient was certified, he was not insane. It seemed to the speaker rather absurd, and he hoped that some really constructive suggestions might be forthcoming with regard to that. His own feeling was that that sort of question should be taken out of the province of juries. If it were left to the judges of the High Court much greater justice would be done. In these cases it was usual for "experts" to come in, and it had been rather distressing to see the sort of evidence given by one doctor against another doctor. He wished the British Medical Association or the Royal Medico-Psychological Association would make some suggestions on this matter. On the question whether there should be two certificates or one, there was a financial consideration—namely, that in England it would cost £20,000 a year more to have two certificates for the rate-aided cases instead of one certificate. This was not an indifferent sum; it would be another matter if the safeguard was proved to be necessary, but no case was brought before the Royal Commission in which wrongful detention was established. The only purpose of the two certificates was to satisfy public sentiment. In conclusion, he felt that it was extremely important that all should do what they could to break down the superstition which existed in regard to mental illness. That was the rock on which the ship foundered every time.

Sir ARTHUR ROSE (Chairman, Board of Control, Scotland) confessed himself a whole-hearted admirer of the findings of the Royal Commission. He looked upon the report as a very valuable strategical contribution to this great subject. When he and Dr. Marr gave evidence before the Commission he gathered, from the questions asked, that there might easily be a very marked divergence of opinion among the Commissioners, and he was immensely relieved and somewhat surprised to find that the report of the Commission was unanimous. The reason for that unanimity was probably that the Commission went only so far as it was believed the public was likely to accept. If a more progressive view had been advanced there would have been a risk of a minority report, and possibly a somewhat strong report, which would have done much to retard any progressive legislation. He urged that any legislation which was proposed should be considered sympathetically by medical bodies, and he did so to a certain extent with a selfish object in view. In Scotland certain amending legislation was required, and while he saw no possible chance of Scotland going forward with an amending Act of its own, he was very hopeful that if a reasonably progressive measure were passed in England Scotland would be able to follow, not necessarily adopting the same measure, but perhaps going a stage further than England would have gone.

Dr. C. O. HAWTHORNE said that he had no title to speak on this matter as an expert in lunacy administration, but he happened to have been a member of the committee appointed by the British Medical Association to prepare the Memorandum of Evidence submitted to the Royal Commission and subsequently to examine the Commission's report. What he had to say was without prejudice, he

hoped, as well as without intimate personal experience of the carrying out in actual practice of the provisions of the lunacy law. It was therefore with considerable sympathy as well as pleasure that he had heard the speech of Earl Russell, who had brought the discussion down from a somewhat academic level to the actual and practical situation. He had learned, in studying this subject under such conditions as he had defined, that certain broad views had to be considered in dealing with the situation. The first which impressed itself upon him was the severe interpretation attached in the public mind to the certification of a patient. This was an aspect of the subject which had to be most carefully considered. It had been suggested that the Board of Control was sufficient; but that Board arrived upon the scene too late. The stigma had already been inflicted by the certificate, even though the certificate was reported in a few days to have been unnecessary. Even looking at it from that narrow and practical point of view, the very serious nature of the step taken in granting a certificate could not but be admitted. A second impression made upon his mind by the studies and inquiries which were incumbent upon him as a member of the Association's committee was the great importance which was attached, at least in England, to the protection of the liberty of the subject. The propositions put by Lord Russell commanded the whole situation so far as legislation was concerned. The third consideration which he had to bear prominently in his mind was the position of doctors throughout the length and breadth of the land in respect to lunacy certification. There was a reluctance to sign certificates; even, in a considerable number of cases, a determination not to sign them. Deeds of partnership between doctors were being drafted one of the conditions in which was that neither partner should sign a lunacy certificate. It might be that this was a stupid view, but when it was said that sentiments widely spread must be respected in practical legislation he claimed that here was a body of sentiment which must be so respected. There were two positions, and only two, which could be logically defended when considering lunacy from the point of view of the doctor's relation thereto on the one hand, and on the other from that of legislation. It was quite a defensible position for doctors to make the claim that mental disorder, like physical disorder, was a medical matter, and that doctors alone were competent judges. That was a position which could be argued, but it involved a process of education of the public which, as had been generally admitted during the discussion, was very far from accomplished. The other position, which was a sound one, was that the State came in and said, "This is a form of medical diagnosis and treatment which invades the liberty of the subject, and we will not allow medical treatment of that kind to be imposed until we are satisfied that such treatment is necessary." When the State had once said that, it was for the State to say what was the legal machinery by which the State itself could be satisfied that this treatment was essential. The State might ask the advice of the profession, but it was for the State to accept the responsibility necessarily imposed upon it when it declared that this was a matter in which medical treatment should not take its normal course until the State was satisfied that it was necessary. His claim was that when the State had once stepped in and assumed authority, the State must at the same time recognize that it assumed responsibility. The doctors might be asked for advice, for their opinion upon the whole situation, or upon the particular case, but that was simply a contribution in the shape of evidence towards the solution of what had now been made a legal issue. If that was the true position, then manifestly the doctor ought to have in this issue the immunities which were enjoyed by other witnesses. Dr. Risien Russell had urged that the doctor ought to give not merely a certificate, but an opinion under the sanction of an oath. But why did he not do so now? Simply because the representative of the law did not call upon him to do so. Under the existing lunacy law it was competent for the justices to require that everything should be on oath. There was a choice, then, between these two alternatives: Was the medical profession to go to the public with the high academic doctrine that this whole matter was a matter for doctors, or was it going to say, "No, we recognize the intervention of the State for determining whether this treatment ought or ought not to be applied, but the State must accept the responsibility, and must not allow that responsibility, which carries penal consequences, to be imposed upon the shoulders of the medical practitioners who have given you an opinion in the case"?

Dr. C. Hubert Bond (Commissioner, Board of Control, England and Wales), after remarking how pleasant it was to find that all his colleague Sir Frederick Willis had said appeared to commend itself to the meeting, said that in 1884 the Earl of Shaftesbury was still chairman of the Lunacy Commission in England. Mentally he was as alert as ever, and devoting nearly the whole of his energies to the welfare of the insane, but he was in failing bodily health and feeling the weight of fourscore and five years. At that time a section of the public was suffering from what might be called an anxiety neurosis in mass form, manifested by a fear of wrongful detention for alleged mental disorder, just in the same way as when the recent Royal Commission was appointed. As a result of the feeling which was so much in evidence a motion was carried in the House of Lords for the institution of a committee of inquiry into the administration of the Lunacy Acts. It was not intended as an attack on the Lunacy Commissioners any more than was the institution of the recent Royal Commission, but the great-hearted Earl was hurt to the quick. He knew and felt the complete integrity of his own department, and he felt also that, to use his own words, "God had manifestly blessed the efforts of the Commission." He wrote also that he had "everything on his side except self-confidence in his own power to meet" what he felt to be a charge, and that "the defence would be perfect in any other hands." He saw in the drift of such an inquiry and in the legislation proposed to follow it, especially in the proposed intervention of a justice (again to use his own words), "the labour, the toils, the anxieties, and the prayers of more than fifty years being in one moment brought to naught." So far as Dr. Bond knew the history of those days, Lord Shaftesbury had the support of each of his colleague Commissioners, legal as well as medical, and of all the leading medical men practising psychological medicine. The depth to which Lord Shaftesbury's emotions were stirred had its echo in the prayer he was not ashamed to record in his diary: "Cast me not off in the time of old age; forsake me not, O Lord, when my strength faileth." No one could read or listen to the recital of that prayer without reverence and respect. To Shaftesbury, though a layman, the proposals, especially the intervention of the justice, were anathema, and he took the strong step of resigning the chairmanship of the Board of Commissioners. This was in May, 1884; but in June, upon a hitch arising in the setting up of the committee of inquiry, he was induced to withdraw his resignation. Death, however, withdrew him from the fight shortly afterwards. It was at least permissible to speculate whether, had he been spared, and with sufficient bodily powers to play his part in the fight when it did come, the intervention of the justice would ever have been carried. At any rate, inured to the justice, as in a sense were those who worked in England, they could not listen to Professor Robertson's magnificent and virile appeal to their medical instincts without desiring to pause and ask whether it was yet too late to relieve the justice of a task for which the majority of justices had no love or even taste. It might be that if the uninformed part of the electorate, whose importance Lord Russell had emphasized, really knew these and other cognate historic facts, knew of the absence, as found by the Royal Commission and other inquiries, of any cases of improper detention, and could hear or would read Professor Robertson's presentation of the medical needs and the medico-legal aspects, they themselves would give a swing to the pendulum in the direction of *Res floreat medicinae*.

Dr. Vernon Briggs (Boston, Mass.) said that his excuse for speaking in the discussion was that he had served in Massachusetts as a member of three different boards concerned with mental disease and under three

different political administrations. He was now on the advisory committee of the State Commission of Mental Diseases. He had followed the discussion of this subject in the medical journals of this country, and he was hoping that England would go far beyond what it had been possible to accomplish in the States. He thought that the experience in the States might offer some suggestions towards the solution of the problem here. In the States the medical societies set themselves to educate the public, and had invited the magistrates to give addresses which were followed by discussion in which the medical men represented their side of the question. This had been of great value to the magistrates and indirectly to the public. Another point in the education of the public had been to endeavour to set in its proper and less alarming perspective the hereditary factor in insanity, with the consequence that the people were not so much alarmed or depressed by the notion of hereditary taint as was the case ten years ago. An investigation had been made of 28,000 certified cases in mental hospitals extending over forty-two years, and the hospital records of these cases showed that in only 54 per cent. was there an hereditary factor. In other words, a man who had mental disorder was as likely not to have had a tainted ancestry as to have had it. These were facts beyond dispute, and the education of the public along these lines helped to bring about a better state of feeling. With regard to certification, the plan was for two physicians to certify cases which were considered dangerous to the public or to themselves or to need medical treatment. There was such a thing as voluntary commitment, whereby the patient could go into hospital for any length of time, so long as he did not become irresponsible. A system of six months' parole, which could be renewed for a further period, was in force for patients who had recovered up to a certain point, and such patients could be, if necessary, returned to the hospital without any further legal procedures. The patients had not to be brought before a magistrate; it was true that the magistrates had a right to send for the patient, or to go and see the patient, but they hardly ever exercised it. Probably 95 per cent. of the patients committed were never seen by any magistrate. He could recall only one legal action by a patient against a physician—it was in New York—and though the jury awarded a certain amount of damages, the verdict was afterwards set aside on the ground that certain of the evidence was inadmissible in law. The opposed testimonies of medical men relating to the same case in criminal actions had caused some perplexity, and an effort had been made to eliminate such occurrences by discussions. One result had been that in the case of criminals who had been to gaol before and criminals arraigned on a capital charge there was, before trial, an examination by the State Commission of Mental Disease. A law to this effect had now been in force for five years in the State of Massachusetts. The clerk of the criminal court was bound to report the case to the Commissioners of Mental Disease, and the Commission appointed two alienists of standing to examine the alleged criminal. Their report was filed by the clerk of the court, and was open to both sides—the prosecution and the defence. In the five years during which this plan had been in operation there had been no case for trial before the courts in which medical men had appeared against each other in the witness-box; previously it was a constant occurrence. The result had been to raise the position of the profession. He hoped to learn something from this country as to the treatment of the early case. In his own State a sum of £20,000 a year was now being appropriated for clinics to which early cases could be sent. The Legislature felt that the money was well spent, because cases might so be prevented from becoming a burden for many years upon the State.

The CHAIRMAN (Dr. Marr) said that owing to the lateness of the hour he was now compelled to close the discussion although there were several others who had intimated their desire to speak. Dr. MORTLOCK-BROWN protested against the closuring of the discussion, to which, she thought, a whole day might well have been allocated; the voice of the general practitioner had scarcely been heard, and the woman's point of view had not been put forward. The CHAIRMAN said that he regretted very much having to close the discussion, but he pointed to the lateness of the hour and to the fact that the audience was rapidly thinning. He had selected the names of speakers in the order in which they had intimated their desire to speak, except that he had called upon two or three others who, because of their position or work, he thought everyone would wish to hear.

SECTION OF THE HISTORY OF MEDICINE.

JOHN D. COMRIE, B.Sc., M.D., F.R.C.P.Ed., President.

A VINDICATION OF THE SECTION.

THE PRESIDENT remarked that this was the first occasion on which a Section of the History of Medicine had been held at an Annual Meeting of the British Medical Association. He had had many letters from persons in this country, on the Continent, and in America, expressing their approval. At the present time no medical school in Great Britain required its students to learn the history of the subject, and there were only a few at which it was possible for the student who desired it to obtain such instruction. This was remarkable in view of the fact that a knowledge of ancient law was necessary for the training of a lawyer, while Church history was considered essential to the theologian. Even in practical sciences like chemistry, physics, and engineering, a knowledge of when and by whom the various laws and facts of their sciences had been discovered was regarded as a necessary part of the study of the chemist, the physicist, and the engineer. He would go so far as to say that in connexion with even so common a disease as pneumonia the doctor would be likely to treat his patients more successfully if he knew something about the history of this disease, and if he had some inkling as to why some measures of treatment had been abandoned while others had persisted. The office-bearers of the Section had decided at this first experimental meeting to regard the subject from a practical rather than from what might be called the antiquarian standpoint, and they had accordingly arranged for a discussion on "The historic evolution of disease."

CLINICAL VARIATIONS IN DISEASE FROM THE HISTORICAL POINT OF VIEW.

SIR HUMPHRY ROLLESTON, Bt., K.C.B., M.D. (Regius Professor of Physic in the University of Cambridge), opened a discussion on this subject by reading the following paper:

This is the first time that a section has been devoted to the History of Medicine, and the exertions of our President, who is Lecturer on the History of Medicine in the University, to bring this about in a city with such high traditions in medicine have most appropriately been crowned with success.

A discussion on "Clinical variations in disease from the historical point of view" is also singularly appropriate in the Northern Athens, where it was the subject of much high debate some seventy years ago. W. P. Alison and Robert Christian were convinced that a change in the clinical manifestations of disease had gradually taken place during the first thirty years of the nineteenth century, whereas John Hughes Bennett, who in 1848 succeeded to the Professorship of the Institute of Medicine, which Alison had held from 1822 to 1842, Allan Thomson intervening, was emphatic in the opposite direction. On January 21st, 1857, Hughes Bennett read a paper before the Medico-Chirurgical Society of Edinburgh on "Observations on the results of an advanced diagnosis and pathology applied to the management of internal inflammation, compared with the effects of a former antiphlogistic treatment, and especially of blood-letting," which aroused much adverse criticism from Alison, T. Watson, and W. T. Gairdner, to which Hughes Bennett promptly replied. He considered that the supposed change from a sthenic to an asthenic

type of disease was invented as an afterthought by way of justification for the undoubted change from the more vigorous antiphlogistic measures and venesection to a more supporting and stimulating treatment, and that the change had been in the treatment, not in the disease. Markham adopted the same doctrine, and Hughes Bennett followed this up by a treatise on *The Restorative Treatment of Pneumonia* (1865) which, according to our President, was most effective in banishing excessive venesection as a routine treatment. In 1865 William Stokes strongly supported the change of type in disease, but later Murchison wrote:

"A careful study of the history of epidemics shows that each of the continued fevers and of the other acute specific diseases has maintained its identity in all ages and countries. . . . The statements which have been made in reference to fevers having undergone a change of type or nature are mainly to be attributed to a non-recognition of different species, together with changes in the prevailing fashion of treatment."

He instanced as an example of this confusion typhus, a fatal disease, with relapsing fever which rarely has a lethal termination. When these two diseases occur together the distinction between them might easily go no further than the view that the type of the prevailing epidemic had altered; in certain circumstances, especially towards the close of an epidemic, when the mortality rate is falling, it may be difficult to decide, more particularly from the records, whether there was merely this change or whether a new disease had come on the scene. The comparatively frequent coincidence of two diseases—namely, typhus and bubonic plague—in epidemic form during the sixteenth, seventeenth, and eighteenth centuries, though the nature of typhus was not recognized, is pointed out by Crawfurd.

Sources of Information.

The surest, though much limited, means of getting reliable knowledge as to the nature of disease in the past is morbid anatomy, which, under the name of palaeopathology, defined by M. A. Ruffer (1913) as the "science of diseases which can be demonstrated in human and animal remains of ancient times," has been recently employed, especially in Egypt by Fouquet (1889), M. A. Ruffer, Elliot Smith, and Wood Jones, and in America by R. L. Moodie, who has done much work in the investigation of bone disease in fossil animals in the prehuman ages of 500,000 years ago. Though the diseases that can thus be recognized are mainly those of bone, examination of mummies has shown the existence of arterio-sclerosis, tuberculous disease of bone, mastoid disease, hydrocephalus, rheumatoid arthritis (2900 B.C.), gout, talipes, dental caries, pyorrhoea, pneumonia and anthracosis of the lungs, hepatic cirrhosis, biliary and urinary calculi, bilharzia, renal abscesses, periappendicular adhesions, and achondroplasia; but not of rickets or syphilis, the appearances ascribed to syphilitic osteitis being really due to the activities of beetles after death (Elliot Smith); this has a bearing on the much debated origin of syphilis in the old or in the new world.

The account in the *Times* of April 7th, 1927, of the tomb of Senab in the sixth dynasty (2900 B.C.) seems to show that he was an achondroplasic. Professor Elliot Smith, who considers this is much the earliest certain proof of this condition, has put me in touch with Mr. Warren R. Dawson, and I have thus had the advantage of seeing a paper that he is publishing on "Pygmies, dwarfs, and hunchbacks in ancient Egypt," from which the following information may be taken. Pygmies were members of a small-sized race from the interior of Africa, and not, as Pierre Marie suggested, achondroplasics; on the other hand, the dwarfs, whom the ancient Egyptians were accustomed to attach to their establishments, were usually people of stunted development, often achondroplasies, drawn from their own population, and of these many examples, mainly males, are extant in mural paintings and sculptures. In a Roman cemetery (A.D. 200) at Chester evidence of achondroplasia was found (Elliott). Of acute disease in ancient Egypt there was evidence of an eruption resembling small-pox in a mummy of the twentieth dynasty (1200-1100 B.C.) (Ruffer and Ferguson).

Sculptures and models provide valuable evidence of diseases in the past, especially abnormalities of growth; Egyptian and Greco-Roman sculptures and statuettes definitely show the existence of achondroplasia—for example, the gods Ptah and Bes—and at a much later date pictorial representations of Court attendants by Velasquez and others tell the same tale. Mr. Warren Dawson reproduces ancient Egyptian statuettes showing steatopygia, and Pott's disease of the spine is shown in a bronze statuette of ancient Egypt. Sir Berkeley Moynihan recognized the manifestations of cerebro-spinal fever in a bust done of Alexander the Great in his fatal illness. Votive offerings, although studied by Holländer, Sambon, Regnault, and others, are disappointing as accurate representations of the patients' lesions.

There is not so much information to be obtained from the available pictures of antiquity, but mural paintings in Egyptian tombs of various periods show achondroplasic dwarfs 5,000 years ago (Ruffer), and those from Pompeii and Herculaneum, now in the museum at Naples, represent some pathological conditions, such as achondroplasia and rickets (Meige). The portrait in the Uffizi Gallery, Florence, of Ferdinand I, Emperor of Germany, painted in 1521 by Lucas van Leyden and reproduced by Semon, shows the adenoid face, though it was not till 1868 that Wilhelm Meyer of Copenhagen made adenoids known to the profession. The famous epidemic dancing mania, variously called *le dance de Saint-Guy*, dance of St. John or of St. Anthony, and by Paracelsus *Chorea Sancti Viti* (as pilgrimages were made for cure to the Chapel of St. Vitus at Zabern), so prevalent in the Rhine provinces during the fourteenth and fifteenth centuries and lasting into the sixteenth, was drawn by Pierre Breughel (1567-1625) and engraved by Hondius in 1642, and thus identified with major hysteria and hystero-epilepsy by Charcot and Richer, who also recognized hystero-epilepsy in Raphael's pictures. In their *Les difformes et les malades* (1889) these authors reproduced a number of pictures showing plague victims with buboes, and among them Saint Roch (born A.D. 1295), the patron saint of that disease. Paintings may show that at the time they were painted certain diseases were more severe than they are now, and they may represent morbid conditions, such as leprosy, which have now become rare, and of diseases which have now disappeared—such as hydrophobia, described by Aristotle and Galen, the subject of many papers in the medical records of the eighteenth century, and familiar to some of us now present, which has become extinct in this country as the result of the administrative action of the Muzzling Order (1897). As showing the importance of such precautions it may be mentioned that in Moscow six hundred people were recently reported to have been bitten by mad dogs, and to be therefore attending the Pasteur Institute.

The written records of acute diseases, though far more numerous than the pictures and the representations by the plastic artist, are more difficult to utilize in the recognition of disease. Alterations in methods of description and nomenclature interfere with the identification of the nature of bygone epidemics, and the probable existence of more than one disease raging at the same time, as in the Antonine plague in Rome, adds to the difficulty. An example of the difficulty of translating ancient into modern terms is the designation "lepra," which covered lupus, syphilis, pellagra, and many skin diseases, as well as leprosy. It is, however, extremely tempting to read into an ancient description of disease that of one more recently recognized.

Evolution of Disease.

As disease is not a fixed entity but a reaction of the complex organism to varying degrees of injurious influences, it is reasonable to anticipate that with altered conditions in the soil or the host, such as are rapidly and most obviously produced by famine and war, the reactions would vary accordingly, even if the morbid agent remained the same. In addition, changes, extremely slow though they may have been, from the cave to the club man, would suggest that their diseases, like their virtues, would present a somewhat different aspect. Changes in the lowly organisms responsible for infective disease occur with far greater rapidity and ease than in the higher animals, and hence it is obvious that corresponding modifications in the reactions they set up must be anticipated, even if the soil

remained unaltered. Chapin considers that changes in the virus are much more important than those in the host, and argues that alternations in the type of small-pox and scarlet fever are not due to changes in the immunity of the host. Changes in the type of disease, like epidemics, are readily determined by wars and famines, which lower the bodily resistance, and, by the accompanying overcrowding, increase the opportunities for the transmission and the virulence of infections. These clinical changes would be more likely to occur in acute epidemic diseases than in some chronic and constitutional conditions, but unfortunately it is in the acute epidemic diseases that it is most difficult to judge whether or not real changes have taken place.

Alteration of the clinical manifestations may depend on secondary infections. Influenza in 1918-19, when complicated by haemolytic streptococcic invasion of the respiratory tract, became widely fatal, and its aspect altered so much—as, indeed, has been so often seen in its history, as shown by its numerous names—that it was actually hinted in the lay press to be plague. The present mild small-pox, or alastrim, has been thought to be due to the specific virus alone, and the ordinary more severe small-pox to be caused by a secondary streptococcic invasion favoured by the insanitary conditions so prevalent in the past. The influenzal virus, whether filter-passer or Pfeiffer's bacillus, favours invasion by, or sensitizes the tissues to the action of, other viruses. The influence of measles in leading to tuberculosis is familiar, and it is possible that carriers of the viruses of encephalitis lethargica and of acute poliomyelitis, and the meningococcus, may become infected as the result of influenzal infection, or, to express the same result in other words, that the influenzal virus may activate latent viruses of encephalitis lethargica, acute poliomyelitis, and cerebrospinal fever.

The problems frequently arise whether changes in the clinical characters of disease are real, such as that universally acknowledged to have occurred in scarlet fever, which was serious and often malignant forty or fifty years ago and now is mild; whether apparent alterations are due to modification in description rather than in fact—in other words, whether the change has been in opinion only; and whether more accurate observation has led to subdivision of what were previously regarded as "clinical entities" and so to the crystallization of new diseases, such as typhoid, paratyphoid, and typhus, out of "continued fever" and the various forms of anaemia. It is natural, but futile, to speculate how far the evolution of the streptococci can be correlated with the appearance of the numerous diseases now known to be associated with their presence. The tendency of pathologists, bacteriologists, and clinicians has been to separate out specific diseases, whereas that of some epidemiologists, notably Hamer and Crookshank in this country, has been in the opposite direction, and to regard as modifications of a basal disease what are by others regarded as etiologically distinct.

It is natural to assume that with alterations in the seed and the soil the resulting changes in the clinical picture may become so definite as to constitute new diseases, for of course disease must have undergone a gradual process of evolution and may be expected to appear, wax, and wane. The separation of the various exanthematous fevers is a more modern achievement than perhaps many realize, and it is not unlikely, as Chapin suggests, that some of them are of comparatively recent development. An eruption like small-pox was identified in an Egyptian mummy (1100 B.C.), though, in spite of Rhazes (A.D. 1000), it was not really distinguished from measles until 1675 by Sydenham; measles and scarlet fever, which were not differentiated until twenty years later, now seem distinct enough, but there were many acute observers before their differentiation; much more recently—in 1881—came German measles (rubella, rötheln), and now there are the much discussed, if not still doubtful, fourth and fifth (erythema infectiosum) diseases. Typhus was probably a famine fever in ancient Greece, but it is impossible to make any statement about the occurrence of typhoid fever in ancient Greece (W. H. S. Jones, 1909), and of course typhus and typhoid were not differentiated until the nineteenth century. Chicken-pox was not definitely recognized as a distinct disease until the middle of the eighteenth century, by William Heberden the elder in 1767, and may reasonably be regarded, as vaccinia is known to be, as of the same stock as small-pox. At the present time the dualists believe that alastrim, or para-small-pox, is distinct from ordinary small-pox, and not merely a mild form of the disease, analogous to the present scarlet fever. It might be urged that in para-small-pox the evolution of a new form of disease is occurring, just as in the past German measles (rötheln) has been distinguished from measles and scarlet fever. But the evidence, both immunological and clinical, is in favour of the view that it is a mild form of small-pox, not a distinct disease, and that with vaccinia these two conditions are due to variants of the same virus. Further, history shows that in the past extremely mild epidemics of small-pox have occurred (vide Newman).

War and its attendant circumstances may so alter the conditions as to lead to the appearance of new forms of disease, such as trench fever and trench nephritis (also seen seventy years before in North America, but not in the interval), or of diseases rare in ordinary times, such as spirochaetosis icterohaemorrhagica, and, from the associated starvation of non-combatants and prisoners, famine oedema and deficiency diseases. In his recent paper on the "Influenzal constitution" Hamer includes typhus in this category, and ascribes its peculiar features and the rash to the influences of famine, remarking that epidemiologically typhus cannot be regarded as a clinical or pathological entity, and correlates the decline in typhus and relapsing fever with the apparent increase in the mortality from influenza and pneumonia. The epidemics and now or unusual types of diseases produced by war and famine tend to disappear or to become rare with the advent of peace and better conditions.

The Clinical Recognition of Diseases now Distinct.

Though difficult, there is much interest in attempting to determine when present-day diseases were first known, and, what is by no means the same proposition, when they first appeared, for the revelations of palaeopathology may go further back than written records. For if their morbid lesions can be certainly recognized the clinical aspects must have been on much the same lines as at the present time. Tuberculosis has been identified in the Egyptian mummies, and from written records there is evidence that the pulmonary form was very prevalent in ancient Greece, in spite of the open-air life and the supposed antagonism of malaria. Mumps appears to be one of the very few acute infectious diseases accurately isolated in ancient Greece, and with its orchitic complication was described by Hippocrates; bubonic plague is undoubtedly a disease of established antiquity. The pestilence which attacked the Philistines after their capture of the Ark of the Covenant has been conjecturally thought to have been plague, as those who did not die developed tumours and were advised to make offerings of five golden representations of their tumours and of five golden mice. Otherwise the earliest accounts of the plague, with the diagnostic references to the buboes, have enabled its appearance to be recognized in the third century B.C. in Egypt, Libya, and Syria; Aretaeus (A.D. 70) mentioned pestilential buboes. Its history can be most certainly traced from the great plague of Justinian, which came from Egypt in A.D. 542 and overran Europe. The nature of the plague of Athens (430 B.C.) described by Thucydides and Diodorus Siculus has been thought to be malignant scarlet fever, or small-pox, but typhus has also been confidently suggested by Murchison. The pestilence in Rome in A.D. 165, the Antonine or "long" plague which was noted by Galen, has been variously identified as dysentery, small-pox, and, like the plague of Athens, as typhus. There is, as Crawfurd points out, reason to believe that it was not one and the same disease throughout the fifteen years of its duration.

Malaria has been conclusively shown from contemporary literature of the time, which proves the clinical resemblance of the disease then to its present form, to have been prevalent in Greece from the fourth century B.C., and in Italy from about 200 B.C. W. H. S. Jones (1907), who has most thoroughly correlated the classical references to malaria, shows that there is good reason to believe that one factor in bringing about the decadence of these two

great powers was the deterioration of national health by malarial infection; his work shows the value of medical history as explaining that of the world.

Although a clinical distinction between *gout* and *rheumatoid arthritis* dates only from the sixteenth century, evidence of chronic arthritis is forthcoming in Neolithic skeletons and in ancient Egypt. Professor Elliot Smith had intended to be here and to have shown that it existed in 4000-3500 B.C. It is interesting to find that, from his special study of gout in Byzantium, Jeanselme has come to the conclusion that of the twenty-four Sultans in the period 1299-1695 six, or one in four, were victims of this disease.

The history of *diphtheria* exemplifies the difficulty of distinguishing between acute infections involving the throat as recorded and identifying them with those now recognized as quite distinct. So much so, indeed, that Adami argued that diphtheria arose as the result of the transformation in special circumstances of a harmless diphtheroid organism into a virulent pathogenic bacillus about the time that P. P. Bretonneau of Tours drew his sharp-cut classical picture of the clinical characters of the disease. Putrid or malignant sore throat had often been described—by Aretaeus the Cappadocian in the second century A.D., and Aetius of Amida in the sixth century—and it has been thought that the morbus suffocans or garrotillo in Spain in 1583-1618, 1630, 1645, and 1660 were epidemics of severe diphtheria. John Fothergill's *Account of the Putrid Sore Throat* (1748) probably dealt with diphtheria as well as scarlet fever, and, as Norman Moore pointed out, John Huxham, in his description of malignant ulcerous sore throat in 1767, mentioned paralysis of the soft palate, and so was dealing with diphtheria, although he did not distinguish it from scarlatina anginosa. Francis Home's description in 1763 of croup (a word employed by Patrick Blair in 1713) may have been of diphtheria, and certainly gave rise to much confusion, which even now is not unknown in connexion with death certification. Cullen's cynanche maligna may also have been diphtheria. In spite of P. P. Bretonneau's descriptions in 1821 and subsequent years diphtheria was not separated from scarlet fever in this country until the official returns of the Registrar-General for 1855 (published in 1857), when it became a world-wide disease.*

Influenzal Diseases.

The epidemic occurrences of influenza with its attendants or allies or modified phases is a subject of great interest, and has been attractively argued by Hamer, Crookshank, and J. T. C. Nash from the epidemiologist's unicist point of view as against the specializing bacteriological standpoint.

The sweating sickness, or sudor anglicus of the sixteenth century, is an example of a disease which has been thought to have had its day, though perhaps not to have entirely ceased to be; for it has been reported in a modified, certainly milder, form in the Picardy sweat, or *la suette miliare*, which occurred in 1886 in the Canton of Lussac-les-Châteaux and proved fatal in 130 out of 1,200 cases (Parmentier), and in 1906 in the Charentes when 6,000 persons were attacked, with a mortality of about 2 per cent. (Haury). The more modern epidemics differed from the early ones in the longer duration of the illness and the outbreak of a miliary rash on the third and fourth days. Many outbreaks of this curious disease have been recorded; Hirsch collected 194 epidemics in France alone between 1714 and 1874. Its history is of some interest; though called the sudor anglicus it appears highly probable that, whatever its nature, it was brought to England in 1485 from Normandy by Henry VII's mercenaries, who may have been carriers. Payne suggested that when introduced into this country it found a virgin soil and so ran like wildfire, just as measles did in the Faroe Islands (1781 and 1846) and Fiji (1875 and 1907). In this country five epidemics are recorded—in 1485, 1508, 1517, 1528, and the last in 1551. The onset was described as dramatically sudden, sometimes fatal after a few hours or even instantaneously. Caius, who had the opportunity of seeing it in 1551, wrote two brochures on it, one for popular consumption, *A Boke or Counceill against the Sweate or Sweating Sickness* (1552), the first monograph on a single disease in English, and a professional expansion in Latin *De Ephemerâ Britannica* (1556), and stated that it was "a fever of one natural day." Much able argument has been brought by Hamer to prove that the sweating sickness was really influenza, and Nash and Crookshank have followed his lead; on the other hand, Chantemesse, President of the Commission appointed to investigate the Charentes epidemic, was emphatic that there was not any resemblance between them (M. Foster), and the Commission suggested that it was transmitted by the fleas of field mice.

Cerebro-spinal fever, which Hamer regards as one of the influenzal or catarrhal diseases and "manifestations of one and the same influence," was first formally recognized in 1805.

Dengue, spread by mosquitos and now regarded as probably due to a filterable virus, has been recognized since 1779. It is a pandemic disease of the tropics, and in some epidemiological respects resembles influenza; in fact, Hamer has persuasively argued that it, like the sweating sickness, is influenza, and in all three claims to "discern the operation of a single disease entity."

Encephalitis lethargica when described in 1917 by von Economo of Vienna and seen in the following year in this country appeared to be a new disease. This view was vigorously contested by F. G. Crookshank, who argued that it was the same as acute polio-encephalo-myelitis and one of the influenzal manifestations which could be identified in medical history for at least 400 years, its occurrence being so irregular and at such intervals that it was frequently regarded as "a new disease." Arthur Hall, while inclined to admit that probably the Tübingen *Schlafsucht* of 1712-13, the "nona" in Italy in 1889-90, and some small groups of cases may well be so regarded, points out the danger of reading into the often vague records of past epidemics a description of a disease not named until much later. He, however, recognizes that Dubini's electric chorea in Italy during 1846 and the following years corresponds to what is now known as the myoclonic form of epidemic encephalitis. It may be noted that in 1413 an outbreak of epidemic hiccup, which also appears to be a manifestation of the myoclonic form, occurred in Tournai (Tricot-Royer).

Some other changes in the incidence of disease may be briefly mentioned. *Appendicitis* has undoubtedly become much commoner since 1889 when influenza broke upon us after an absence of forty-one years, and it might be excusable to connect it in some way with the gastro-intestinal form of that epidemic disease; but there does not appear to be any historical evidence in favour of this association. That appendicitis existed before Reginald Fitz of Boston baptized it in 1886 is clear from the accounts of James Parkinson (1812), John Burne (1836), Addison (1839), and even earlier isolated cases, such as those described by Meslivier (1759) and Musgrave (1684). For its widespread and frequent incidence in recent times there have been many attempts at explanation, mainly dietetic in character; it does not appear probable that its greater frequency now is apparent rather than real and due to more accurate diagnosis in modern times; for this has taken place under the eyes of those who have watched the declension of chlorosis all over the civilized world, which has also been ascribed to changes in fashions of food or of clothing. Pernicious (Addisonian) anaemia, the other anaemias, and the leukaemias have almost certainly become more numerous, or at least more commonly recognized as a result of intensive microscopical examination of the blood and haemopoietic tissues; thus Niemann's or Pick's disease has been separated from Gaucher's splenomegaly.

Environmental factors necessarily have an important influence on the incidence of diseases—for example, in parasitic diseases conveyed by animal or insect carriers, such as hydatid (dogs) and malarial (mosquitos) infections.

* The history of the word "diphtheria" forms an interesting item in the Medical Research Council's monograph on *Diphtheria: its Bacteriology, Pathology, and Immunology* (1923). Bretonneau originally called it "diphthérite" (from διφθέρα = a membrane), and in 1855, without any comment or explanation, changed it to "diphthérie." It appears that his pupil Trousseau suggested the word "diphthérie" in a letter to Bretonneau as early as 1825 (Triaire).

Occupational and industrial diseases have come into prominence with the evolution of dangerous trades, and diminished with the elimination of the morbific factors; during the war trinitrotoluene and tetrachlorethane were examples of the appearance and skilled control of such poisoning; it is said that mule-spinners' and sweeps' cancer are practically confined to this country.

It may not be uninteresting to refer briefly to the variations in the incidence of *aneurysm* and its relation to syphilis. This is not the occasion to enter on the vexed question of the birthplace and history of syphilis, whether it was brought from the new to the old world by Columbus's crews in 1493; whether, as has been rather fancifully suggested, it existed in a mild form in Europe and, being taken to Haiti and America and a virgin soil, came back as a virulent infection; or whether, as Sudhoff argues, its existence in Europe had been long known to, but concealed by a conspiracy of silence on the part of "courtezans, *souteneurs*, debauchees, and their faithful, confidential, sagacious counsellors, the masters of surgery (and barbers)." At any rate, the existence of syphilis became so widely recognized at the end of the fifteenth century that it is commonly spoken of as having attained epidemic proportions; it certainly received its present name in 1530 from Fracastorius. Aneurysm, which was described by Galen, Aetius, and Antyllus, appears to have been mainly of the extremities and due to trauma until the beginning of the sixteenth century, when aortic aneurysms became prominent in a way that had never been observed before (Klotz). The syphilitic origin of aneurysms is thoroughly established, but the great war has brought traumatic aneurysms again into view. A change that some of us have lived long enough to see is the present rarity of popliteal aneurysm, which Crisp in 1847 found to be second only to thoracic aneurysm in frequency; Morgagni correlated the incidence of popliteal aneurysm with repeated injury to the back of the knee in postillions and cavalrymen; Crisp accepted the influence of trauma, but, as among his 137 cases there were only three coachmen and one postillion, did not accept the occupational factor. Although popliteal aneurysm got rare before motors became universal, there may be some relation between the decline of horse riding and this form of aneurysm.

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DISCUSSION.

Professor VAN LEERSUM (Amsterdam) said that no better means could have been devised to show the general usefulness and the necessity of the study of the history of medicine than those adopted for the present Section, as illustrated particularly in the paper read by Sir Humphry Rolleston. Historical facts were not by any means dead. They did live still, and could be used in solving the problems such as Sir Humphry Rolleston had outlined. In Holland, and especially in some sections of it, the frequency of thyroid enlargement was causing uneasiness. Amongst other causes, the modern water supply had been suspected, which contained only traces of iodine. This was regarded as a serious matter, for the people of Holland depended a great deal on this modern water system. The student of the history of medicine, however, knew that enlargement of the thyroid had been very frequent in earlier times, because the painters' models of the fifteenth and sixteenth centuries must have suffered from it, as was proved by many pictures of Madonnas by old Dutch, Flemish, and German masters.

Dr. RATCLIFFE (Birmingham) said he would venture to assert that the Section would have an extremely important place in medicine if it would devote some of its time to what Sir Humphry Rolleston had shown was the constant changing and the evolution of disease itself. There were no records except in history of the symptoms of disease, and they were too apt to be looked on as fixtures. He had been in general practice long enough to see, in a certain number of diseases, great changes such as had been pointed out by Sir Humphry Rolleston, changes in severity and changes in symptoms, and an evolution of many diseases. If the Section were to take records of epidemics or records from time to time as to the symptoms of disease, it would, in process of time, make a very valuable contribution to the faculty of medicine. In his own lifetime several diseases had altered a great deal—for example, scarlatina from being a serious disease had now become quite mild; chlorosis had disappeared, at least from Birmingham, and anaemia and membranous croup were rapidly following in its train. What was the cause of this? Most of these diseases were bacterial, and there must have been an evolution going on among bacteria, just as much as there has been an evolution of the horse or monkey or human being; evolution was not a question of length of years—it was a question of numbers of generations. The alleged increase of appendicitis was an open question, but however this might be, he thought that it had been followed by a diminution in other diseases. He would like to urge on this Section to attempt to get correct accounts of these changes in disease, and, if possible, records of the various epidemics.

Lieut.-Colonel STEPHENSON (I.M.S.ret.) said that some interesting sidelights on the historical evolution of disease were to be found in fourteenth century Persian work. He had lately been investigating the work of a Persian who wrote in the first half of the fourteenth century and was a historian and poet and learned in all branches of

knowledge. The work to which he wished to refer was a scientific compendium or a popular educator, and its medical interest lay in the fact that after the description of each mineral, plant, or animal an account was given of its medical properties. The medical use of every well known animal was defined, and small animals were administered whole for reduction of stones in the bladder. As regards the historic evolution of disease, what comparisons could be made? Could any conclusions be framed as to which diseases were commonest? It was only possible to say which were most frequently mentioned, and quartan fever occurred most often; probably it was not so common now. Diphtheria, though not now common in tropical countries, was mentioned frequently in this work, and gout was distinguished from acute rheumatism. Hemiplegia was fairly frequently mentioned, as was to be expected; the other common diseases were cataract, stone in the bladder, leprosy, ringworm of the scalp, and tuberculous glands. Here there had probably not been any change.

Dr. A. A. Warden (Cannes, France), after referring to the question whether appendicitis was now more frequent or whether all appendices removed had really been the subject of acute inflammation, asked when appendicitis was first diagnosed and named. He thought the earliest report was that of the case of the French statesman Gambetta in Professor Lannelongue's detailed paper. Gambetta died in what were thought to be very suspicious circumstances. He had been either accidentally or intentionally shot, and in the course of the next few weeks he developed an illness which proved fatal. Professor Lannelongue stated that he diagnosed an appendicular abscess and desired to operate, and all the other consultants refused. The drawings made by Lannelongue at the time were published in the paper, and a photograph was also given of Gambetta's hand, showing that the wound caused by the bullet was completely healed and had not caused his death. This was probably the first definite record of the diagnosis of appendicitis confirmed by *post-mortem* examination, the year being 1881.

Sir StClair Thomson (London), after praising the inauguration of the Section, quoted Napoleon's remark, "The only guide to the future is the past," and that of Goethe, "The man who looks forward only sees one road of advance, but the man who also looks backwards sees two roads."

Dr. Wright (London) said that an understanding of the evolution of disease was very much assisted by the study of the conception of disease through the ages. The present view of the causation of disease was that it was bacterial in its origin. Although the ancients and the mediaevalists had no knowledge of bacteria, they did attribute disease to particuli or materies morbi, and he thought no stronger evidence could be produced of the fact that disease was attributed to these causes than was to be found in the writings of Lucretius, who summed up the scientific philosophy of his period. In classical and mediaeval times disease was very closely associated with malodours, and there, of course, instinct was correct. All sensations were attributed to particulate matters which came from the various effluvia, and it was natural to seek the prevention of disease by counteracting the effect of these malodours through the introduction of more pleasing odours in the form of aromatics. Sweating sickness had given rise to a great deal of controversy in the past, and the classical and mediaeval writers largely attributed it to particulate matter. Referring to appendicitis, he said that of course perityphlitis, typhlitis, and appendicitis were all the same disease; it was a very old disease, and was referred to in the earliest medical literature. The English name for it was "iliac passion," and it was referred to by Sydenham, whose treatment was the application of the warm body of a living puppy to the right iliac fossa. Dr. Wright quoted from Heister a description of a dissection, which he thought was probably the first authenticated case of appendicitis as distinct from perityphlitis.

Sir Humphry Rolleston, in replying, said that there had been descriptions of appendicitis in England in the seventeenth and eighteenth centuries, and still earlier ones in Egyptian mummies. Parkinson described it in 1812, Hodgkin also described it, and so did Burne, and these probably inspired Addison's description in 1839 in the first and only volume ever published of Addison and Bright's *Treatise on Medicine*.

The Sections.

BRIEF SUMMARY OF PROCEEDINGS.

(Concluded from page 174.)

SECTION OF MEDICINE.

Thursday, July 21st.

Treatment of Acute Lobar Pneumonia.

Professor J. Hill Abram (Liverpool), Vice-President of the Section, presided over the discussion, which was opened by Professor John Hay (Liverpool), who commented on the lack of unanimity as to the actual nature of acute lobar pneumonia; the drift of opinion now seemed towards the view that it was essentially a local disease striving to become general. The outlook in a particular case depended on the virulence and type of the infection and the resistance of the patient. It was, however, a self-limiting disease tending to recover, 75 per cent. of cases surviving if allowed to do so. With regard to prophylaxis, much more care should be given to the prevention of contagion than was generally the case; there was no longer any uncertainty as to the value of prophylactic vaccination, as the beneficial results of inoculation had been proved conclusively. The common cause of death was circulation failure, the important factors being: (1) toxaemia, (2) anoxaemia, (3) stress on the right heart; and the essentials in treatment were fresh air and complete physical and mental rest. Professor Hay gave detailed suggestions as to how these were best ensured. Specific treatment consisted of treatment by vaccine or serums or both. Dealing with vaccine treatment, he quoted the opinions of rival schools of thought, and confessed that hitherto his own attitude had been frankly critical; the position was, however, altered if one regarded the disease as essentially a local one in the lungs, and he had been much impressed by the successful results reported by Captain Malone. All advocates agreed that vaccine, to be of any use, must be given within the first three days. With regard to serum treatment, Type 1 serum had made good. Turning to symptomatic treatment, Professor Hay discussed the methods of relieving pain and insomnia, which must be overcome if rest was to be assured, and the need for opiates was emphasized. In the prevention and treatment of cardiac failure the efficiency of the myocardium must be maintained, and oxygen must be administered in an efficient way at the first indication of cyanosis. As a heart stimulant alcohol was not only useless, but detrimental. The routine administration of digitaline he believed to be of definite value, and caffeine was a good cardiac stimulant; strychnine, however, was much overrated, and there was no evidence that it was a direct cardiac stimulant. Professor W. H. Wynn (Birmingham) spoke in favour of the vaccine treatment of acute lobar pneumonia. Many medical men were afraid of giving vaccine for fear of getting a reaction in the negative phase, but a reaction only occurred in sensitized individuals, and the sensitizing antibodies were only present in acute infection after an interval; in this interval vaccines could be given without reaction, and by giving an adequate dose it was possible to control the infection to a large extent. His vaccines were made from young primary cultures, 100 million being the smallest dose for an adult. Charts were shown demonstrating the immediate fall in the temperature if the vaccine was given during the first two or three days; if given later the result was more difficult to obtain and repeated injections might be necessary. Dr. H. Morley Fletcher (London) agreed that once the diagnosis was made the patient must be disturbed as little as possible; he was also in general agreement with regard to alcohol, but he thought the pendulum was swinging perhaps too far, and that there was danger in the absolute prohibition of alcohol in pneumonia, as in

certain circumstances it was helpful. Diathermy was worthy of further consideration. In his view oxygen given early, adequately, and systematically was the most important therapeutic agent. He had used sodium nucleinate, but had seen no good results. Professor R. J. S. McDowall (London) dealt with cardiac failure from the physiological aspect, and recommended bleeding as the best physiological method for the relief of the heart. Alcohol reduced venous pressure, and this explained its beneficial action in pneumonia. The rapid, shallow respiration that caused the deficient aeration of the blood was believed to be due to an exaggeration of the Herrig-Breuer reflex, and experimental work had shown that this reflex could be abolished by adrenaline. Dr. S. Davidson (Edinburgh) put in a strong plea for serum therapy. There was overwhelming indirect experimental evidence, and also the direct evidence from the clinical results at the Rockefeller Institute. Much help with regard to prognosis could be given by the bacteriologist experienced in pneumococcal work. Sir James Barr spoke of the need for prophylactic measures and the use of common sense. Dr. Hewat (Edinburgh) strongly commended the use of alcohol. Dr. Gardner-Medwin (St. Asaph) gave the results of his experience with intramuscular injections of sodium nucleinate coupled with the oral administration of sodium bicarbonate and glucose. At whatever period the injection was made the crisis was precipitated in forty-eight hours. The cases on which the original work was done were severe cases with "heliotrope cyanosis" in the 1918-19 epidemic, and the results were equally good in the pure pneumococcal pneumonias and in those following influenza.

Dr. D. H. Ballon (Montreal) gave a demonstration of the value of lipiodol in the investigation of intrathoracic disease, illustrated by a series of most excellent lantern slides.

Friday, July 22nd.

PATHOLOGY AND TREATMENT OF PERNICIOUS ANAEMIA.

Professor Lovell Gulland (Edinburgh) opened the discussion with a short description of the general aspect of pernicious anaemia, giving as the principal criteria in diagnosis a high colour index, the presence of megalocytes, and leucopenia. The high colour index was due to the fact that red cell formation was megaloblastic rather than normoblastic. The disease was essentially a toxaemia, and the problem was—What is the toxin? It was generally regarded as haemolytic, but there was little real evidence of this in the sense of actual dissolution of corpuscles. The toxin probably inhibited the normoblastic function of the marrow, the development of neutrophils, and platelet formation; it produced sclerosis in the spinal cord, and indeed widespread changes in all the organs concerned with the elimination of poisons. No known organism could as yet be identified as the cause of the disease; the latest organism suggested was the *B. welchii*. It had been surmised that with a low blood cholesterol the unsaturated fatty acids present in the blood in excess had a haemolytic action, but in any case this could only be a secondary effect of some primary metabolic disturbance. Achylia also he considered to be a secondary factor. In contradistinction to the cryptogenetic form, there were several groups in which the cause was known, as, for example, bothriocephalus anaemia, some cases of sprue, of syphilis and malaria, and of pregnancy. Turning to treatment, Professor Gulland said that, although from the point of cure the treatment was unsatisfactory, it was possible to do a good deal, and 100 per cent. should recover from a first attack. Rest, sunlight, and fresh air were important, and diet must be regulated by the alimentary condition. His experience of the high protein diet recommended by Minot and Murphy was limited; some patients had done well, but others had not been able to take it, and others had rebelled. Arsenic was our standby: it was best given as the hydrochloric solution by mouth in increasing doses, and continuing with the largest dose compatible with freedom from arsenical symptoms until the colour index dropped below unity; it should then be stopped and iron given. Professor W. K. Hunter (Glasgow) said that discussion on the pathology of pernicious anaemia must centre round the two most notable features in its morbid anatomy—namely, the evidence of increased destruction of red cells in liver and other organs and the changes in the bone marrow. He considered that there must be some definitely haemolytic agent present, and thought that it acted by stimulating phagocytosis of red cells. It was improbable that the megalocytic marrow was entirely due to the increased haemolysis, and in his view the megaloblastic change was the initial one produced by the toxin which determined the increased haemolysis. Dr. G. R. Minot (Boston, U.S.A.), whose paper was read by the Honorary Secretary, described his results with a high protein liver diet. Statistics were given showing that of 125 cases treated practically all had recovered, the red cell count reaching to from 4½ to 6 million in nearly all cases. The cases had been observed for periods of from four months up to three and a half years. The effect of the diet on the alteration in size and number and nature of the red cells was described. Recently Cohen had isolated a liver fraction precipitated by alcohol which apparently had all the properties of the whole liver in its effect on the marrow. Details as to various methods of giving the liver were described. Professor van den Bergh (Utrecht) agreed with what the opener had said, but emphasized the importance of achlorhydria, which was much more constant in pernicious anaemia than in gastric carcinoma. He had also noted that the red cells were elliptical in shape, a condition characteristic of pernicious anaemia. Increased haemolysis with a breakdown of the Hb. molecules was the basis of the disease, and the bilirubin content of the serum was nearly always increased. Professor Knud Faber (Copenhagen), after agreeing that pernicious anaemia was a symptom complex with many different causes, spoke of the extreme importance of infection in the upper alimentary tract; in all cases of achylia of whatever origin the bacterial flora was abnormal. In his view the constitutional factor involved the blood rather than the stomach. While not denying the good results obtained by Minot's diet, he thought it was too early to use them to explain the pathogenesis of the disease. Experiments were described showing the possibility of producing a megaloblastic anaemia by the injection of bacterial endotoxin. Dr. A. F. Hurst (London) gave figures to show the very intimate association between achylia, and especially familial achylia, with pernicious anaemia and subacute combined degeneration of the cord. Dealing with the bacteriology, Dr. Knott had found that the normal duodenum was always sterile. In pernicious anaemia and subacute combined degeneration over 90 per cent. were infected with *B. coli* or streptococcus. He had never found *B. welchii*. He regarded prophylaxis as of extreme importance; cases showing glossitis and tingling of the extremities should be carefully investigated, and septic teeth removed and achlorhydria treated with hydrochloric acid; he handed round a paper describing a method of preparing this so that it was very palatable and readily taken. Dr. L. Schiff (U.S.A.) discussed the appearance of serum bilirubin—this was increased in pernicious anaemia, but not in the secondary anaemias. Dr. W. E. Cook (Wigan) described alterations in the polymorphonuclear neutrophil cells and suggested the probability that the initial error was the production of abnormal offspring from the haemocytoblast. Dr. S. Davidson (Edinburgh) emphasized the importance of the work done on *B. welchii* infection; this organism was far more frequent in the stools of patients with pernicious anaemia than in normal people. Dr. Salisbury-Sharpe (London) suggested that the disease was due to infection by a spirochaete. Dr. A. Blackhall-Morison read a paper on coronary angina pectoris.

SECTION OF SURGERY.

Thursday, July 21st.

TREATMENT OF TOXIC GOITRE.

MR. T. P. DUNHILL (London), opening the discussion, said that in both true exophthalmic goitre and toxic adenoma there was a strain thrown upon the gland. When the gland was normal a true exophthalmic goitre resulted, but when the strain acted upon a physiologically hypertrophied gland which had failed to involute, a secondary

exophthalmic goitre occurred. Many patients coming to him had had the disease for many years and had become worse in spite of medical treatment. Surgical treatment arrested the disease more quickly and certainly than medical measures. Early operation should be considered if the patient was not improving six months after the onset of the disease. Auricular fibrillation demanded operation. Usually he removed one lobe and the isthmus first, and a part of the second lobe later; it was extremely difficult to decide how much gland should be taken away. Professor G. R. Murray (Manchester) said that in some forms of toxic goitre only surgery could bring relief. It was more frequently required for secondary than for primary goitre, in which only about one-twelfth of the patients required an operation for relief as *x* rays or radium were usually effective. Mr. C. Thurstan Holland (Liverpool) made an eloquent appeal for *x*-ray treatment, which had no mortality attached to it. He thought *x* rays should always be used in early cases and be given a short trial in the advanced ones. Professor R. E. Kelly (Liverpool) pointed out the advantages of intratracheal anaesthesia and preliminary iodine medication. Dr. John Eason (Edinburgh) declared death to be a remote possibility in primary exophthalmic goitre. Operation, whilst it acted quickly in restoring normal function, raised the general death rate from the disease. He regarded it as necessary when there were signs of deterioration of the internal organs. A general policy of operation was wrong. Sir William de Courcy Wheeler (Dublin) pointed out the occurrence of cycles in the disease. Among 82 personal cases 90 per cent. had had medical treatment and had passed into a chronic stage. He believed the only way to prevent relapse was a subtotal thyroidectomy. Iodine was very valuable, but might give a false sense of security. Mr. John Morley (Manchester) said that only *x* rays and surgery had any effect at all upon the disease. Owing to the use of Lugol's solution the operative mortality had been very greatly reduced of late years. He thought seven-eighths of the gland should be removed. *X* rays failed to influence cardiac disturbances. Mr. A. J. Walton (London) stated that diffuse colloid goitre, if it persisted into middle life, was transformed into diffuse adenomatous goitre. This kind of gland rarely gave rise to thyrotoxic symptoms. There were two types of exophthalmic goitre—vascular and nervous. The latter was frequently unrelieved by operation. Medical treatment had a considerable mortality. *X* rays were useless except for carcinoma. The use of Lugol's solution was good. Dr. L. A. Rowden (Leeds) said that in an experience of 550 cases treated by *x* rays he had come to regard this method of treatment as the best. It was often necessary to give such a dose that the skin was damaged. Dr. F. N. G. Starr (Toronto) had known death to occur soon after *x*-ray treatment and had seen many failures. During 1926 he and two assistants had operated upon 253 patients for goitre. Only 27 were non-toxic. True exophthalmic symptoms had sometimes been associated with adenomata. Mr. Cecil Joll (London) had never seen exophthalmic symptoms in toxic adenoma, though he had had a very extensive experience. Much judgement was necessary to decide how much gland to remove. The mortality was less in operations for toxic adenomata than in exophthalmic goitre. Mr. Dunhill replied that he did not operate in the early stages, and that he considered opinion was gradually crystallizing as to the place surgery should take in the treatment of the disease.

TREATMENT OF INFECTED WOUNDS.

Sir Almroth E. Wright (London) demonstrated the principle of wound treatment. He gave an outline of his researches into the conditions which determined the persistence of infection in a wound, and showed how the flow of serum to the infected surface was the best method of destroying bacteria. He described the factors favouring the growth of the gas gangrene bacillus, and demonstrated the relative futility of the simple irrigation of wounds. He also explained how the addition of antiseptics to wound discharges lessened their antibacterial power. Hypertonic salt was a much better therapeutic agent.

Friday, July 22nd.

CHRONIC APPENDICITIS.

Mr. Wilfred Trotter (London) classified chronic appendicitis under three heads. In one of these the disease was chronic from the beginning and gave rise to symptoms which were due to an associated mesenteric lymphadenitis, disturbances of motility or secretion at the ileo-caecal angle, or to general septic absorption. Cholecystitis was definitely related to appendicitis and was apt to occur in young persons; urinary infections were also seen. In children disturbances of growth, pustular skin eruptions, and some cardiac disorders were sometimes attributable to chronic appendicitis. He outlined his procedure in operating upon patients in whom the diagnosis was a little uncertain. Mr. J. W. Dowden (Edinburgh) confined his remarks to methods of diagnosis. He described the conditions which simulate appendicitis, and how they could be distinguished. Mr. Victor Bonney (London) emphasized the frequency with which chronic salpingitis or ovarian blood cysts gave rise to symptoms resembling chronic appendicitis. He advised a mid-line incision for operating upon women who were thought to suffer from appendicitis. Mr. A. J. Walton (London) doubted the existence of primary chronic appendicitis; changes seen in the appendices of such cases he regarded as evolutionary in character. Appendicular dyspepsia was a real disease, but very rare. He did not remove the appendix as a routine when operating upon the upper abdomen. Mr. H. N. Fletcher (Brighton) found in a follow-up of 82 cases of chronic appendicitis that operation failed to cure in about one-third. In the diagnosis he regarded the history of a previous acute attack as very important. Mr. A. H. Burgess (Manchester) said he explored the whole abdomen in all cases of chronic appendicitis. He regarded tenderness in the right iliac fossa as an extremely valuable sign if it was proved to be greater than that caused by symmetrical pressure on the left side. Mr. Andrew Fullerton (Belfast) urged that the specific gravity of the urine coming from each kidney should be estimated and compared in every doubtful case. By this means a renal origin of the pain could be excluded. Mr. G. H. Colt (Aberdeen) relied upon gurgling in the right iliac fossa when pressure was made there as the most certain sign of chronic appendicitis. Mr. H. Temple Mursell (Johannesburg) called attention to Rovsing's sign of pain in the appendicular region on pressure over the left iliac fossa; he believed it reliable. Professor D. P. D. Wilkie (Edinburgh) thought that perhaps there was a tendency to precipitate operating for pain in the right iliac fossa. He deprecated this and urged the education of the public so that they could be induced to undergo a complete investigation by modern methods before insisting upon operative exploration. He did not believe much in the simple *x*-ray diagnosis of chronic appendicitis. Mr. Trotter, replying, said he regarded chronic appendicitis as often the initial stage in a long train of symptoms. He thought for this reason the effective treatment of the disease in childhood was important.

BURNS.

Mr. A. MacLennan (Glasgow) reviewed methods of treating burns, and gave his experiences. Mr. Wilson (Edinburgh) gave an interesting account of the use of tannic acid in the treatment of burns and showed some remarkable lantern slides of the results of its use.

SECTION OF OBSTETRICS AND GYNAECOLOGY.

Thursday, July 21st.

HYGIENE OF MENSTRUATION IN ADOLESCENTS.

PROFESSOR R. W. JOHNSTONE (Edinburgh), opening this discussion, said that the period of adolescence in the British race extended from about the age of 12 to 18, varying within limits in each individual. He described the anatomical, physiological, and psychological changes of puberty, and said that it was obvious that at such a critical period unhygienic methods of living might easily produce disastrous results affecting both body and mind. The reproductive organs during this phase of life called for a specially good supply of healthy blood and nerve energy,

and if these were diverted either to the muscular system or the intellectual centres the proper development and early functioning of the reproductive organs were liable to suffer. A natural mode of life must be aimed at, including the avoidance of excess in any direction, physical or mental. But almost as much damage might be done both to the reproductive functions and to the nervous system by encouraging a girl to believe that she was the subject of a very special delicacy during the menstrual period. From time immemorial menstruation had been regarded as a function imbued with mystery, and to some extent that idea still persisted. If they could dispel the lingering relics of such morbid tradition the next generation would suffer less from dysmenorrhoea. He advocated individual instruction of each girl as she reached puberty, so as to ensure in each individual the recognition of menstruation as a natural physiological function during which a moderate amount of wholesome exercise was actively beneficial. Dr. J. H. P. Paton (St. Andrews) questioned the wisdom of allowing girls to take part in active games during menstruation. His rule was to stop violent forms of exercise but to encourage walking, and his results were very satisfactory. He estimated the occurrence of dysmenorrhoea among girls of a high standard of general health at about 9 per cent., the low incidence being due to good general condition. He referred to the question of regularity, showing that intermittent amenorrhoea was comparatively common, due to the severe mental and physical strain of a school term. Dr. Alice Sanderson Clow (Cheltenham) referred to the somewhat earlier onset of the catamenia in the children of well-to-do parents than in those of the poorer classes. They were not justified in regarding a case as one of primary amenorrhoea so long as growth in height and weight continued. She allowed girls to continue games such as tennis and hockey and to take warm baths. She had reduced the proportion of those suffering from dysmenorrhoea by these measures from 46.7 per cent. to 10.8 per cent., and the majority of the latter were not permitted by their parents to take the exercise advised. Dr. Vaughan Sawyer (London) thought that the specific fevers of childhood were largely responsible for the incidence of dysmenorrhoea. Dr. G. I. Strachan (Cardiff) recounted his experiences in connexion with a large mental institution. Professor Gibbon FitzGibbon (Dublin) said that the cases of dysmenorrhoea seen by the gynaecologist were mainly those of acquired dysmenorrhoea in girls aged 20 to 25. Professor McIlroy (London) thought that girls without occupation were the most frequent sufferers from dysmenorrhoea. The discussion was continued by Dr. Catherine Chisholm (Manchester), Dr. Mabel Ramsay (Plymouth), Dr. Farquhar Murray (Newcastle), Dr. Jeffries (Brighton), Professor Hendry (Glasgow), the President, Dr. Haultain (Edinburgh), and Dr. Sutherland (Australia). It will, it is hoped, be published in full in an early issue.

Friday, July 22nd.

SHORT COMMUNICATIONS.

The final meeting of this Section was devoted to a series of short communications. Dr. F. A. E. Crew (Edinburgh) read a paper on the effects upon the sex ratio of conception, early and late, in relation to the oestrous cycle of the rat. His results appeared to show that the time of service in the oestrous cycle was of no importance in determining the sex ratio. The paper was discussed by Dr. James Young (Edinburgh) and the President. Dr. Fletcher Shaw (Manchester) discussed uterine fibroids after the menopause, and urged that in view of the dangerous changes which might be undergone by fibroids their earlier removal was desirable. The paper was discussed by Dr. Bethel Solomons (Dublin), Professor McIlroy (London), Professor FitzGibbon (Dublin), Dr. Fordyce (Edinburgh), Dr. James Young (Edinburgh), and the President. There was a general agreement among most of the speakers with the conclusions reached by Dr. Fletcher Shaw. Dr. Daniel Dougal (Manchester) reviewed the clinical features of ectopic pregnancy, based upon a hundred cases which had been under his care. Dr. Leith Murray (Liverpool), Dr. Bethel Solomons (Dublin), Dr. Farquhar Murray (Newcastle), Dr. Forsyth (Edinburgh), Professor R. J. Johnstone (Belfast), and the President raised interesting points in connexion with the paper. Dr. Bethel Solomons described his experiences of lower segment Caesarean section and the indications which in his view called for its performance. Dr. FitzGibbon, Professor McIlwraith (Toronto), Professor Hendry (Glasgow), and the President took part in the subsequent discussion. Dr. Douglas Miller (Edinburgh) reviewed the clinical results in 83 cases of failed forceps delivery which had occurred in 500 emergency admissions to hospital. Unfortunately time did not permit of an adequate discussion of this most important paper.

SECTION OF THERAPEUTICS AND PHARMACOLOGY.

Thursday, July 21st.

THERAPEUTIC USES OF CALCIUM SALTS.

PROFESSOR F. R. FRASER (London) opened this discussion. He said that the function of calcium in the living organism was imperfectly understood, but it was known that it was an essential in the clotting of blood. It appeared also to be necessary for the proper contraction of heart muscle, and it played an important part in the balance of ions in the tissues and body fluids. Professor Fraser dealt with the indications for calcium therapy, and observed that the effects of administration by the mouth were inconstant, and at best only produced a moderate rise in the level of the calcium in the serum in healthy subjects. Intravenous injections of calcium chloride could be utilized to raise the serum calcium promptly; the effect was transitory, but the method was useful in controlling the severer manifestations of tetany—namely, the convulsions and laryngismus. Indirect methods of influencing the calcium content of the body were perhaps more important than the direct administration of its salts. Dr. L. G. Parsons (Birmingham) restricted his remarks to the treatment of children, with special reference to tetany and bone calcification. He seldom gave calcium by the mouth, since he thought the child obtained sufficient from the food. Dr. C. P. Stewart (Edinburgh) dealt with calcium absorption; in that process acidity in the intestine was an important factor. He said that careful distinction must be made between absorption and retention; he had shown experimentally that the parathyroid hormone had no effect in either process. Dr. G. H. Percival (Edinburgh) had found that the calcium content of the serum was very constant, symptoms occurring only when it was greatly reduced. Therapeutically it was disappointing, and it was only when some controlling mechanism in the body failed that the amount in the body diminished. In pregnancy and lactation the content was low owing to the supply in the food being insufficient for both mother and child. Professor L. Blum (Strasbourg) exhibited charts showing that calcium chloride diminished oedema by promoting diuresis. He also referred to the employment of calcium salts in pleurisy. Dr. F. C. Linder (London), Dr. N. F. C. Burgess (London), Dr. C. G. Lambie (Edinburgh), and the President continued the discussion.

Friday, July 22nd.

OVARIAN EXTRACTS.

Professor W. E. Dixon, opening a discussion on the action and uses of ovarian extracts, said there was no doubt that the ovary was an organ of internal secretion. If an ovary was transplanted into an animal before puberty it did not grow or function, and, therefore, there must be in the body something else necessary for its growth and function. Clinical results with ovarian extracts had been disappointing, possibly owing to their having been administered in a haphazard and unscientific manner. Professor Dixon considered in detail the three main substances contained in extracts of ovarian gland—namely, (1) oestrin, which when injected into animals promoted development of the sexual organs; (2) lutein, which had the power of inhibiting the oestrous period; and (3) pituitrin. He emphasized the fact of the close relationship between the pituitary gland and the ovary. Miss Katharine Coward (London) gave an account of the results of injection of ovarian extracts in rats and mice after removal of the ovaries, and described her method of standardizing the

doses of ovarian preparations. Dr. A. S. Parkes (London) said that he had shown experimentally that the presence of the corpus luteum in the mouse was essential for the continuance of pregnancy; an active corpus luteum extract was necessary in ovarian extract therapy, but so far only an oestrous hormone was available for use. Dr. W. R. Addis (Manchester) related the results of investigations with extract of ovary without corpus luteum to produce labour, in fifty cases. There had been complete absence of consciousness of uterine contractions by the patient in the first stage of labour, and no pain until its end, thus approximating the condition in lower animals and the savage races. Dr. W. F. T. Haultain (Edinburgh) described the effect of giving ovarian extracts after operations in which both ovaries had been removed. Dr. Kennedy, Dr. Campbell, and Professor Greene contributed to the discussion.

THE ACTION OF DIGITALIS.

Professor D. Murray Lyon (Edinburgh) read a paper on the action of digitalis, illustrated with lantern slides.

SECTION OF DISEASES OF CHILDREN.

Thursday, July 21st.

ACUTE INTESTINAL OBSTRUCTION IN INFANCY AND CHILDHOOD.

MR. A. MACLENNAN (Glasgow), who opened this discussion, dealt first with obstruction due to congenital anomalies, citing in turn duodenal stenosis, jejunal and ileal atresias, colic obstructions, exomphalos, Meckel's diverticulum, and strangulated hernia. He then considered acquired causes and protested against the classifying of intussusception among the obstructions, on the ground that this led to delay in operating. Symptoms which had a mechanical explanation and those which were due to interference with function were discussed. He emphasized the desirability of washing out the stomach early in the anaesthetic period, of approaching to the obstruction from the sound side, and of avoiding handling. He did not hesitate to perform enterotomy, and was not altogether opposed to chloroform as an anaesthetic in these cases. Mr. Barrington-Ward (London) indicated the relative diagnostic value of the different symptoms and signs of obstruction, and referred at some length to internal hernia and volvulus of the small intestine. In the treatment of intussusception he recommended Farr's method of injecting air into the large gut as an adjuvant to operation. Miss G. M. A. Herzfeld (Edinburgh) reported 160 personal cases, 116 of acute intussusception (24 deaths), 16 of obstruction due to abdominal tuberculosis (6 deaths), 22 of irreducible and strangulated hernia (no deaths), and 6 of post-operative obstruction in acute appendicitis (1 death). She mentioned the importance of combating dehydration before operation. As an anaesthetic she preferred open ether combined with local infiltration with novocain. She had also used spinal anaesthesia with success.

Mr. F. C. Pybus (Newcastle-on-Tyne) referred to the variation in the symptomatology according to the nature of the obstruction, and to the difficulties in diagnosis presented by ketonaemia and Henoch's purpura. He disliked chloroform as an anaesthetic.

Mr. N. M. Dott (Edinburgh) suggested that children suffering from acute intestinal obstruction tolerated operation remarkably well, and that therefore it was doubtful whether the loss in delicate and accurate technique did not nullify any gain due to speed in operating. He thought that resection was possibly the best treatment in certain cases, in which the bowel, though reducible and viable, was severely bruised in the process of reduction. Dr. H. C. Cameron (London) mentioned the need for early diagnosis when there were grave symptoms of intestinal obstruction in a newborn infant. With regard to acute intussusception, he called attention to the contrast in practice prevailing in Scandinavia, where in 80 per cent. of cases taxis through the abdominal wall without laparotomy was successful. He referred also to the differential diagnosis of intussusception from colitis and Henoch's purpura and to the value of blood transfusion. Dr. Lapage (Manchester) dealt with points in diagnosis and pleaded for the avoidance of purgation. Dr. Margaret Tod (Edinburgh) emphasized the practical difficulties of distinguishing between enteritis and intussusception. She was convinced of the value of transfusion.

Friday, July 22nd.

THERAPEUTIC MODIFICATION OF INFANT DIET.

Dr. H. C. Cameron (London), opening a discussion on the therapeutic modification of the diet in infancy, deplored the neglect of pediatrics in medical education and the dearth of professorial chairs. The therapeutic modifications of the diet to which he directed particular attention were: (1) high caloric feeding in post-infective dystrophy; (2) thickened feeding in the vomiting of aerophagy, nervous vomiting, and hypertrophic pyloric stenosis; (3) feeding with a high percentage of casein in fermentative diarrhoea. Dr. Dingwall Fordyce (Liverpool) thought that chemical tests of breast milk were of comparatively little practical value, but that occasionally bacteriological examination proved of the utmost importance. In artificial feeding each case must be taken on its merits. Dietetic modifications might produce their effects by influencing endocrine, particularly thyroid, activity. Dr. G. B. Fleming (Glasgow) thought that underfeeding was an extremely common cause of malnutrition, and discussed the food requirements of normal and malnourished infants. Observations on basal metabolism were quoted. Dr. Lewis Thatcher (Edinburgh) dealt with the use of acidified milk, and spoke highly of the value of lactic acid milk, illustrating his remarks by charts. Dr. L. G. Parsons (Birmingham) gave his experience of milk acidified by the *Streptococcus lacticus*. He suggested that lactic acid was synthesized in the liver to carbohydrate. Dr. C. W. Vining (Leeds) mentioned the common tendency to underfeed the artificially fed infant, and commented on the confusion which resulted from slack methods of measuring quantities of solid and liquid foodstuffs. He referred to the use of banana pulp. Dr. Catherine Chisholm (Manchester) discussed the teaching of this subject and the utilization for teaching purposes of the clinical material in Poor Law and similar institutions. Dr. Mary Lowenfeld (London) mentioned observations on the quantity and composition of the feeds taken by normal breast-fed infants, and with special reference to factors modifying the fat content. Dr. Dorothy Potter (Edinburgh) referred to methods of feeding in use in the Toronto Children's Hospital. Dr. Helen Mackay (London) commented on the great variation in bulk of different foodstuffs. Dr. C. McNeil (Edinburgh) stressed the importance of the clinical observation of the individual child in relation to its feeding.

SECTIONS OF NEUROLOGY AND MENTAL DISEASES.

Thursday, July 21st.

EPIDEMIC ENCEPHALITIS.

UNDER the chairmanship of Professor Edwin Bramwell the second day's proceedings were devoted to a discussion on epidemic encephalitis, opened by Dr. Ivy McKenzie (Glasgow), who dealt with the epidemiology of the disease and described its history. Passing to the pathological anatomy, Dr. McKenzie said that he had found that in the acute and early stages the lesions were diffuse, and tended to be more pronounced in the basal nuclei and in the mid-brain. In Parkinsonian cases the most pronounced lesions were in the substantia nigra. It was clear that the possible toxin responsible for the disease showed a predilection for the grey matter on the afferent side of the proprioceptive system. Dr. McKenzie concluded by giving a short history of the disease in Glasgow. Dr. J. G. Greenfield (London) stated that the virus of epidemic encephalitis had not been identified yet, and it was still uncertain whether the disease had ever been transmitted to animals. Some workers claimed that the etiological agent was identical with that of herpes febrilis, differing from it only in possessing a greater affinity for the nervous system. In the early stages the cerebro-spinal fluid might be quite normal or might contain a slight excess of glucose, which was of doubtful significance. Usually in the first few weeks of the disease, however, there was a lymphocytosis of 10 to 100 or even more cells per cubic millimetre. Dr. Greenfield's

paper was illustrated with some admirable photomicrographic slides of sections of the brain showing different phases of the disease. Dr. G. Riddoch (London) considered the chronic forms of the disease, and maintained that encephalitis lethargica was a chronic malady, comparable in its course with neuro-syphilis and disseminated sclerosis. An important group of cases was that in which the disease appeared to be chronic from the beginning. Dr. Riddoch discussed the milder forms of Parkinsonism, the many different kinds of involuntary movements, spastic paralysis, and muscular atrophies. He also described the various forms of respiratory disorders, and concluded by referring to the interesting endocrine involvements—adiposity, diabetes insipidus, and glycosuria—which sometimes followed the disease. Dr. R. MacNab Marshall (Glasgow) dealt mainly with the mental aspects of the disease, including (1) the clinical importance of the course, (2) the incidence of the characteristic sequels, (3) the mental state of the restless, naughty child, (4) the clinical affinities of the Parkinsonian syndrome. Professor G. Guillain (Paris) described some cases complaining of symptoms that at first appeared to be those of myasthenia gravis. Subsequent investigation showed the cases to be examples of post-encephalitic disorders, which illustrated the importance of fully investigating the physical signs in all cases of apparent myasthenia. Dr. E. Mapother (London) described cases that at first had appeared to be neuroses. The intensity of the mental symptoms seemed to bear no relation to the degree of the physical disabilities. Dr. B. Sachs (New York) said that the lethargy of epidemic encephalitis differed from all other forms of lethargy, and considered that "central basilar encephalitis" was a better term to apply to the disease than encephalitis lethargica. Dr. W. A. Potts (Birmingham) regarded the routine treatment of any focal sepsis, whether nasal, dental, or intestinal, as most valuable even in chronic forms of the disease. He had seen good results following the use of autogenous vaccines made from organisms cultivated from the nose and throat. Professor R. Cruchet (Bordeaux) spoke of the important sign of defective muscular relaxation in the diagnosis of post-encephalitic states. He also showed myograms illustrating the increase in the relaxation-time in Parkinsonian cases, together with others demonstrating the greatly decreased relaxation-time following the injection of scopolamine. Professor K. A. Petrén (Sweden) had found Guillain's "blinking-reflex" a valuable diagnostic sign. In his experience no case had ever developed Parkinsonism at a longer interval than four years from the onset of the disease. Dr. N. D. Royle (New South Wales) gave a cinematographic demonstration of cases of post-encephalitic Parkinsonism illustrating the benefit following sympathetic ramisectomy. Dr. J. H. Wolfsohn (San Francisco) had seen benefit in many cases follow the use of a polyvalent autogenous vaccine (from mixed nasal and intestinal cultures) applied immediately following the acute stage of the disease. Dr. T. A. Ross (Penshurst) emphasized the importance of an adequate history in diagnosing neurasthenia from post-encephalitic states. Dr. Poston (Manchester) dealt with the relation of oculomotor disabilities to vestibular function, and Dr. P. C. Cloake (Birmingham) commented upon certain mental aspects of the disease.

SECTION OF LARYNGOLOGY AND OTOLOGY.

Thursday, July 21st.

Otosclerosis.

Dr. J. S. Fraser (Edinburgh), in some opening remarks as chairman, pleaded for international investigation into otosclerosis and also for team work between the otologist, the physician, the neurologist, the biochemist, and the endocrinologist. Mr. G. J. Jenkins (London), in opening the discussion on otosclerosis, said that this term should include a variety of syndromes, and not merely the middle-ear deafness type of otosclerosis. Osteitis deformans deafness might simulate that of otosclerosis in all types, but in some cases the deafness might be due to the grafting on of true otosclerosis. Osteogenesis imperfecta did not itself cause deafness, but it favoured the implantation of true otosclerosis. The clinical peculiarities in the Eustachian tube, middle ear, tympanic membrane, and external auditory meatus, which were commonly found in otosclerosis, were probably anatomical variations or a local defect, and were not due to otosclerosis; the peculiarities probably favoured the onset of otosclerosis. The symptoms and signs of otosclerosis were not due to primary disease in the labyrinth, but were secondary to a capsular bone disease extending to and involving the essential elements. Professor F. R. Nager (Zürich) said that in 800 cases of deafness examined in private 200 were cases of otosclerosis. The sex incidence was 1.8 females to 1 male; most cases started between the ages of 21 and 25, and after the fiftieth year very few cases were to be found. Of the patients, 58 per cent. had a definite family history, but heredity in otosclerosis was not uniform. The progressive character of the deafness might be slow, with, in some cases, long stationary periods, but very often it was marked by severe attacks of tinnitus. A diagnosis could only be patients 58 per cent. had a definite family history, but he did not hesitate to diagnose otosclerosis even when the membrane was thickened or not quite normal. In 71 per cent. of his cases the drums were normal, and 20 per cent. showed a redness of the region of the promontory. Professor Nager illustrated his paper with beautiful slides in colour photography. The discussion was continued by Dr. Dan McKenzie (London), who pleaded that any method for the treatment of otosclerosis should be given a definite trial, such as re-education and constitutional methods. Dr. Guthrie (Edinburgh) and Dr. Scott Stevenson (London) spoke on the re-education of the deaf by methods such as the Zund-Burguet. Sir James Dundas-Grant (London), Dr. O'Malley (London), Sir William Milligan (Manchester), Dr. Musgrave Woodman (Birmingham), Dr. Wright (Bristol), and Dr. Cathcart (London) also spoke, and Dr. William Hill (London) gave an account of the treatment of otosclerosis by radium, which, however, he did not find very effective.

SECTION OF PREVENTIVE MEDICINE.

Thursday, July 21st.

The State and the Food Supply

Dr. Harriette Chick presided over the Section, and briefly introduced Professor Mellanby, who read the opening paper on the question of the duties of the State in relation to the nation's food supply regarding research, instruction of parents, maintenance of food supplies, and cooking facilities. He emphasized the importance of the dietetic factor in public health, and the bewildering rapidity with which new knowledge on the subject was being gathered. He was convinced that the State had important duties to perform in connexion with both research and education, and suggested the establishment of a new "board of nutrition," with powers to carry out these functions. Dr. Eustace Hill (Durham) supported the proposal to form a board of nutrition. He pointed out the practical difficulties in the way of obtaining opportunities for the instruction of parents, and advocated better teaching on hygiene in the elementary schools. Profiteering in food was a national question. It was a misfortune that retailers preferred large profits and a small turnover to a large turnover with small profits. The consumer never received the benefit of a glut of either fish, fruit, or vegetables, and a better system of distribution was required which would eliminate the middleman. Dr. Kinloch (Aberdeen) protested against the attack on oatmeal, which was a food that required to be balanced by vitamin-giving elements in the diet. With this addition it was a valuable form of diet. He rather distrusted the suggestion for communal cooking, which would lead to interference with family life. If anything were done by the State on these lines he would prefer the establishment of communal laundries, which would relieve the mother of the drudgery of the wash-tub, and leave her free to cook better meals for her family. Dr. Gerald Leighton (Scottish Board of Health) agreed that the State had fundamental duties in connexion with the control of raw materials. It had already fulfilled many of these duties through legislation regulating the milk supply, the limitation of preservatives in food, and regulations governing the handling of meat. He believed that more progress had been made in purifying the milk supply in the last five

years than in the previous fifty. Sir George Newman (Ministry of Health) briefly described the action which the State now took in regard to nutrition, which lay at the foundation of national health. Dr. Macgregor (Glasgow) said that owing to prolonged unemployment and other causes many of the people had only enough money to buy the bare necessities of life, yet vital statistics showed a marked improvement in health conditions. The only conclusion was that old nutritional standards based on calories were fallacious.

Pulmonary Asbestosis.

Dr. Cooke (Wigan) showed a number of slides illustrating the microscopic structure of asbestos, the nature of asbestos dust, and the histological appearances of the lung in a fatal case. Sir Thomas Oliver (Newcastle) described the clinical features of a series of cases, and pointed out the importance of the subject in view of the greatly extended use of asbestos and the increase in the number of persons engaged in its manufacture. Professor Stuart McDonald (Newcastle) showed a number of slides illustrating the pathological changes in the lungs which resulted from asbestosis, and especially the very remarkable foreign bodies which developed in the tissues. There was some doubt as to the nature of these bodies, and it had been suggested that they might be animal or vegetable in origin, but he inclined to the view that they were products of the hydrolysis of asbestos.

SECTION OF PHYSIOLOGY AND BIOCHEMISTRY.

Friday, July 22nd.

Chemical Changes accompanying Muscular Activity.

The second morning of this Section was devoted to a discussion of the chemical changes accompanying muscular activity, after which various short papers were read. Professor T. H. Milroy (Belfast) opened the discussion by reviewing earlier work, and said that Embden now regarded "lactacidogen" as a monophosphoric ester. The presence of phosphoric acid ester was essential for lactic acid production, but esterification and lactic acid production occurred simultaneously and in equimolecular proportions. Esterification in the presence of fluoride, which prevented lactic acid production, was accompanied by increase in acidity, which had been shown by Meyerhof to be due to the higher dissociation constant of the ester acid than the normal. Muscular activity was shown to be accompanied by changes in permeability. The free phosphate anion liberated during activity was retained and was of importance during the recovery period. Professor O. Meyerhof (Berlin), dealing with the energetics of muscular contraction, said that besides the formation of lactic acid the splitting off of a new compound containing creatine and phosphate (discovered by Eggleton and Fiske) played an important part in the supply of energy, producing a third of the whole heat of contraction. Professor G. Embden (Frankfort-on-Main) considered the production of ammonia as an accompaniment of muscular contraction. He reviewed a large number of experiments, and showed that the amount of ammonia varied under different conditions. The nature of the precursor of ammonia was discussed. Sir Gowland Hopkins (Cambridge) referred to observations upon muscles made non-irritable by a prolonged stay in oxygen and restored by solutions of certain electrolytes. After this discussion Professor J. Mellanby (London) read a paper on the function of bile, in which he showed that bile was the normal stimulus for the secretion of pancreatic secretion. The question of fat absorption from the small intestine was also dealt with. Professor J. Tait (Montreal), in a paper on the natural arrest of haemorrhage from wounds, said that this was due to agglutination of thrombocytes. Coagulation of the plasma on contact with connective tissue aided in the process, but this factor was absent if the vessel had been denuded of its adventitia before puncture. Dr. C. Harington (London) read a paper on the constitution of thyroxine; the isolation and synthesis of the substance were described. Professor R. J. McDowall (London) read a paper on physiological considerations in high blood pressure. He discussed the various factors which brought about the increased vasomotor action. Dr. H. Whitridge Davies and Professor B. A. McSwiney (Leeds) read a paper on the circulation rate. Experiments were described which showed that measurements made by the ethyl iodide method did not agree with those obtained otherwise.

Haemolysis.

In the afternoon a discussion on haemolysis was opened by Dr. Eric Ponder (Edinburgh), who, after referring to the recent proofs of the balloon-like structure of the mammalian erythrocyte and of the presence of protein as a principal component of its envelope, gave a short account of the kinetics of the action of the simple haemolysins such as saponin, bile salts, and soaps. He next emphasized the fact that in many of the more complex systems it was important that the components should be mixed in a particular order. For example, the addition of serum to a cell suspension before the addition of sodium taurocholate inhibited haemolysis, but adding the same amount of serum to the mixture of taurocholate and cells resulted in great acceleration. In the first case an inert substance was formed, but in the second, in which the lysin was adsorbed to the cell before the addition of the serum, the combination of lysin and serum protein appeared to produce a new and very haemolytic substance. He cited similar occurrences in the sensitization of cells with brilliant green, and in the case of lysis by colloidal silicic acid and complement. He concluded by indicating the bearing of these findings on the problem of the action of complement and amboceptor. Professor J. Mellanby (London) discussed the action of enzymes on the red blood cells. Dr. R. Brinkman (Groningen) dealt with the reversibility of haemolysis. Sir E. Sharpey-Schafer questioned the reversal changes, and Dr. Eric Ponder replied that in his opinion there was no fundamental difference between the kinetics of the complement and the amboceptor systems and of silicic acid and simple lysins.

SECTIONS OF PATHOLOGY AND BACTERIOLOGY AND COMPARATIVE MEDICINE.

Friday, July 22nd.

Problems of Comparative Medicine.

The chairman, Dr. O. Charnock Bradley, expressed his gratification at the inception of this new Section, and remarked on the already deep debt that veterinary education in Edinburgh owed to human medicine in that city. The discussion on problems and aspects of comparative medicine was opened by Professor B. Buxton (Cambridge), who considered the various general aspects of the subject and the advantages of co-operation between the medical and veterinary professions. Dr. Andrew Balfour (London) directed attention to the essential unity of human and veterinary medicine and the methods by which this unity might be realized. In tropical medicine this was very apparent, more so than in many other branches. He detailed many examples of advances in human tropical medicine which depended on animal experimentation and research. Mr. W. H. Andrews (Ministry of Agriculture) discussed the problems of filterable viruses, and drew attention to the advantages enjoyed by the veterinary pathologist in being able to select the actual species of animal suffering from the disease. Professor Lorrain Smith considered that the main problem lay in the application of the experimental method to medicine, and showed how animal experimentation had thrown light on many obscure human conditions. Professor Browning pointed out the necessity for considering the peculiarity of the animal species, the diseases of which were being investigated.

Mr. James McAllan (Aberdeen) dealt with the question of milk and meat inspection in regard to public health, and believed that both should be in the hands of the veterinary officer under the administrative direction of the medical officer of health. Professor Matheson discussed the work of his department in connexion with the Edinburgh Zoological Gardens, and the bearing of that work on comparative medicine. Dr. R. A. O'Brien (Beckenham) expressed his belief in the benefits resulting from the laboratory co-operation between veterinary and medical workers, and discussed the translation of the results of this work

into field experiments. Dr. Nasmyth thought that comparative medicine could help to explain the periodic outbreaks of epidemics and the disappearance of certain types of disease from certain localities, and pleaded for the incorporation of the veterinary colleges in the universities and the extension of veterinary research.

Dr. F. A. E. Crew considered it futile to talk about co-operation between professions, contact being essentially individual. The study of mankind was by no means only man; and those in power should take advantage of the already existing co-operation and extend it. One of the great problems of the future was the evolution of a disease-resisting stock. Lieut.-Colonel Greig discussed the importance of joint work by the medical and the veterinary professions, and quoted examples from his own experiences in India. Dr. T. W. M. Cameron stated that, while there was unanimity as to the value of co-operation between the medical and veterinary professions, no one had attempted to formulate a definition of "comparative medicine." It was neither "veterinary medicine" or "diseases common to man and animals," but the comparison of all the sciences which comprised medicine as applied to the whole of the animal kingdom. Viewed in this light, comparative medicine was really medicine, and both human and veterinary medicine were sister sciences, both subsidiary to a wider science, which had as its aim the elucidation of the laws and principles governing the cause, spread, and relief of disease.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

INJECTIONS OF ACRIFLAVINE FOR TUBERCULOSIS.

THE use of subcutaneous injections of acriflavine in tuberculosis was suggested by G. H. Johnson[1] and unfavourably reported on by R. J. Gittins[2]; yet, in view of the bankruptcy of medicine in the face of this disease, every promising drug deserves an extensive trial. In recording the following cases I am actuated by the belief that all statistics are of value, for it is only by weighing the accumulated evidence of numerous observers that the effects of acriflavine in tuberculosis may be appraised.

The injection given in all cases consisted of 1 c.cm. of 1 in 1,000 acriflavine in saline; it was given twice a week. All the patients were treated in the open air on the usual lines.

F. W., male, aged 5. Tuberculosis of dorsal spine. Ten weeks' acriflavine treatment. General condition seemed rather worse.

T. S., female, aged 7. Tuberculosis of dorsal spine, with sinuses and amyloid disease. Slow improvement for past year. Six weeks' acriflavine treatment. No apparent effect.

C. D., female, aged 13. Tuberculosis of cervical spine with sinuses. Slow improvement during past eighteen months. Six weeks' acriflavine treatment. No apparent effect.

R.M., male, aged 10. Advanced phthisis. Hectic temperature. Four weeks' acriflavine treatment. No apparent effect. Temperature unaffected.

J. B., male, aged 15. Advanced phthisis. Three weeks' acriflavine treatment. Patient died.

W. M., male, aged 6. Chronic tuberculous peritonitis. Ten weeks' acriflavine treatment. No apparent effect.

W. B., male, aged 10. Active tuberculous peritonitis. Three weeks' acriflavine treatment. No apparent effect.

Y. J., male, aged 6. Tuberculosis of right hip with sinuses. Eleven weeks' treatment. No apparent effect.

W. W., male, aged 13. Advanced tuberculous disease of sacro-iliac joint and of iliac bone. Multiple sinuses. One month's acriflavine treatment. No improvement.

I am unable to convince myself that acriflavine has any effect on the course of the disease; those cases that were improving continued to progress, but those in whom the disease was active continued to go downhill.

I wish to thank Lieut.-Colonel P. MacDiarmid, M.D., O.B.E., the medical superintendent of Alder Hey Hospital, for permitting me to publish these cases.

READ AIDIN, M.D.,
Alder Hey Children's Hospital, Liverpool.

[1] Johnson, G. H., BRITISH MEDICAL JOURNAL, March 27th, 1926.
[2] Gittins, R. J., Ibid., May 7th, 1927.

A PILLION-RIDING ACCIDENT.

THE following rather peculiar injury has been brought to my notice three times in the last two months, and as it is a direct result of pillion riding—a pastime which, although strongly condemned as dangerous, is without doubt becoming increasingly popular—I think it worthy of mention.

The patients were, in all cases, young men who had been pillion-riding astride; it seems from this that the majority of those injured will be of the male sex, for the pillion-riding flapper usually elects to ride side-saddle.

The pillion rider, in order to obtain a more comfortable seat and also rest for his dangling feet, places his toes on the stand for the back wheel or any other convenient metal strut. A slight depression is encountered, and the bump given to the back wheel moves one of his feet on its temporary rest, and the heel, turning inwards, comes into contact with the moving spokes of the back wheel, and one of these causes the injury. The spoke catches the top of the heel of the rider's shoe, and either rips off the shoe and tears the sock only, or, getting a deeper hold, tears down the whole heel flap as well. The heel flap is usually ripped down in one piece, skin and subcutaneous tissues going together, and the lower end of the tendo Achillis and the posterior and inferior surface of the os calcis are exposed to a greater or less extent. The flap is attached at its lower end and retains a sufficient blood supply from the recurrent branches of the plantar arteries.

The wound, being made by a dusty spoke, requires early and thorough cleansing—irrigation with an antiseptic such as 2 per cent. acriflavine in normal saline—and should be loosely sutured. Healing is a little delayed on account of the nature of the injury and the part affected, but in my cases was uneventful.

It appears as if special foot rests or wheel guards were required on all motor cycles which are going to be used for this form of recreation.

DONALD I. CURRIE, F.R.C.S.,
Surgeon, West Denbighshire Hospital, Colwyn Bay.

MEASLES SIMULATING SCARLET FEVER.

THE following case is interesting and instructive in many ways:

I was recently called at midnight to see a boy, aged 2 years and 4 months. His mother said he had been out of sorts for a day or so, and had been rather restless and feverish. He had a short dry cough and the general symptoms of a cold in the head, such as running nose, sneezing, watery eyes, pains in the head and ears, etc. That day he gave more definite symptoms of illness, such as sore throat and vomiting, and when I saw him he had vomited again. His throat was very red and inflamed on both sides and on the posterior wall, and, although the bowels had recently moved, he had a tongue showing thick white fur with red papillae projecting through it—in fact, what was almost certainly a "strawberry" tongue. The temperature was 103° and the pulse 140.

In both popliteal spaces there were several small bright red spots, which were not raised and were distinct from each other. There were no other spots on the legs, but on both elbows similar spots were found. There were no spots on the chest or abdomen, either back or front, and except for one or two on either cheek the face and head were also entirely clear.

I saw the child again at 11 o'clock the next morning, when there was a fairly profuse rash on chest and abdomen, and also on the limbs, while the throat was still sore, the temperature was 101°, and the pulse 130. After consideration I decided to regard the case as scarlet fever, although I told the mother that I was not wholly satisfied and would not be very surprised should it turn out to be measles, as, although the symptoms of scarlet fever were most prominent, the fact of the running eyes and nose and short cough suggested measles to a certain extent. Accordingly, the child was sent into the observation ward of the fever hospital, and in a day's time I learned that the illness had turned out to be measles, not scarlet fever.

The rash appeared between the second and third days, as is usual in scarlet fever, and showed the very common bright red puncta. It also was specially evident at the bend of the knee and elbow, where it was somewhat inclined to be petechial, suggesting Pastia's sign. The prodromal measles rash was here atypical. The pulse was typical of scarlet fever, being 140 to begin with and then 130, while the temperature, 103° and 101°, was rather high for measles. The tongue had a very evident "strawberry" appearance, but, of course, this is occasionally to be found in measles, and too much reliance is not to be placed upon it. The throat and mouth presented the appearance of the ordinary type of scarlet fever, and, although I looked for them most carefully, no Koplik's spots were present. Only the catarrhal symptoms were really in favour of measles, and they were rather overweighted by the other signs.

Glasgow. JOHN WILSON, M.B., Ch.B.Glasg.

Reviews.

COMPARATIVE PHYSIOLOGY OF THE HEART.

The book Professor A. J. Clark has contributed to the new Cambridge series of volumes on comparative physiology is well worth reading and thinking over, if only for the reason that it is good at times to stand back from the mass of detail daily accumulating in the scientific journals and try to see the main outlines of our knowledge as they are being written by many hands. It is entitled *Comparative Physiology of the Heart*,[1] and the first impression it produces is that very little is really known about the working of the heart in the animal kingdom; here and there general conceptions of one or other aspect are emerging, but for the present we must remain content with the consideration of a number of isolated problems. Thus Professor Clark gives us a series of chapters, like short stories, on the transmission of the excitatory process, the nervous control of the heart, the work of the heart in relation to body weight, the influence of temperature and the influence of chemical environment on the heart's activity—each set of facts apparently distinct. Yet, in these and other chapters, we get an inkling of how in a multitude of widely different animals the heart, by variations in structure and mechanism, maintains an efficient circulation. Thus we learn of the simple tubular hearts of the lower invertebrates along which infrequent peristaltic waves slowly pass, and of the four-chambered heart of the canary, which contracts at the rate of 1,000 a minute. Again, we think of the hare and the rabbit with new interest when they are presented as extremely good examples of the contrast between the circulations of the athletic and non-athletic animals. The hare has a heart three times the size of that of a rabbit of the same bulk, and at rest the hare's pulse rate is only one-third that of the rabbit. The slow pulse of the hare is, however, due to vagal control, and when this control is removed the heart rates are similar. Simple abolition of vagal control, therefore, enables the hare to increase its rate of circulation fourfold, whereas the rabbit by this means can only produce an increase of 1.6-fold. The athletic animals as a class have large hearts, slow pulses, and a low oxygen utilization coefficient when at rest. This is an arrangement which permits a maximum increase in oxygen supply to the tissues during violent exertion.

In a short chapter on the properties of heart muscle Professor Clark shows us something of the relations between cardiac and other forms of muscle. The simplest forms of cardiac muscle—for example, the cells of the sinus venosus of the frog—resemble plain muscle closely in their general form, but they are striated and the cells are connected by thin strands. In the frog's ventricle the cells are shorter and thicker, the striations clearer, and the connexions between the cells thicker. In the mammalian ventricle these changes are carried a stage further. Skeletal muscle appears to be a further development from plain muscle, in that numbers of cells have fused completely to form fibres, and these fibres have no automicity and are separated so completely that excitation is not conducted from fibre to fibre. Skeletal muscle is specialized to perform accurate rapid movements completely under the control of the nervous system; cardiac muscle is specialized so that a contraction, once initiated, spreads throughout the whole muscle. In skeletal muscle, since the refractory period is far shorter than the time required for the development of maximum tension, tetanus can easily be produced. In vertebrate cardiac muscle the absolute refractory period is considerably longer than the time required to produce maximum tension, and hence it is impossible to produce tetanus. The long refractory period of heart muscle, the author remarks, is a very obvious safeguard for an organ upon the continuous rhythmic activity of which the life of the individual depends.

These are examples of but a few of the many interesting things dealt with in this small volume; it is necessarily incomplete, it is too short, but it is a good start. We echo Professor Clark's hope that it may stimulate research workers to provide more extensive and accurate information in this field of comparative physiology.

[1] *Comparative Physiology of the Heart.* By A. J. Clark, *M.C.*, M.D. Cambridge Comparative Physiology. London: Cambridge University Press. 1927. (Demy 8vo, pp. 157; 15 figures. 8s. 6d. net.)

INFECTIONS OF THE HAND.

It has been said that there is nothing new under the sun, and even this remark has lost its novelty. Mr. Lionel Fifield's book on *Infections of the Hand*[2] will herald no epochal discovery, but is, none the less, a thoroughly sound, workmanlike book, possessing no little originality and constituting an important contribution to a subject of unquestionable importance. If all house-surgeons, instead of thirsting to open the abdomen, would only make themselves masters of the principles laid down here, the advantage to many individuals in lessening of suffering, and the gain in money to the community at large, would be enormous. There is probably no branch of surgery which is on the average worse treated than infections of the fingers and hand. The public itself is no little to blame in this, as it habitually neglects injuries, often trivial enough at the outset, but essentially fraught with danger, and leading, maybe, to serious disablement and loss of earning power. The principles of treatment are sufficiently simple once the surgical anatomy of the hand has been mastered.

Time was when it was thought sufficient to know the arrangement of the synovial bursae about the flexor tendons. A study of these governed the early treatment, the essential of which was a medial incision along the fingers, with perhaps inspired incisions in the palm of the hand here or there. The resulting prolapse of tendons, which Mr. Fifield rightly terms a calamity, and dysfunction has brought such measures into disrepute. We have learned that infective processes tend to follow certain definite paths, that they spread from one place to another in a certain ordered way, and methods have been evolved to give drainage in the best manner and to prevent extension (particularly operative extension through ignorant measures) when care might have avoided it.

It would be folly to minimize the debt that English-speaking peoples owe to Kanavel's masterly work on this subject. The present book is, however, no slavish imitation. Mr. Fifield has evidently given a great deal of thought to his subject, and has worked on the anatomy of infection and spread in his own way. The result is a book which excels on the clinical side, and is not the offspring of an anatomical pedant. It is well and clearly written, and plainly illustrated, whilst its price is not too high. A chapter on end-results (for one can speak of end-results here with more certainty than in many disease processes) would have been interesting, for most of us have but vague ideas as to the final outcome of these cases. Speaking generally, the prognosis seems to be bad, and an interesting chapter on the effects of more rational lines of treatment remains to be written. One might also be tempted to criticize the author's advice to incise on directors passed along tendon sheaths and so forth. It is true that this simplifies the operation a little, but unless it is done very carefully and in cautious stages the director may easily pass further than is good. No doubt Mr. Fifield intended this to be understood, but since his book is primarily for the relatively inexperienced a word of warning might have been opportune.

EMBRYOLOGY.

A Textbook of Embryology,[3] by Professors Jordan and Kindred of the University of Virginia, affords evidence of the great interest taken in embryology and the importance attached to it by the universities of America. The book, based on the curriculum followed for the last eighteen years or so at the University of Virginia, is eloquent of the thoroughness with which the subject is there studied.

[2] *Infections of the Hand.* By Lionel R. Fifield, F.R.C.S.Eng. London: H. K. Lewis and Co., Ltd. 1926. (Cr. 8vo, pp. viii + 192; 67 figures, 2 coloured plates. 9s. net.)

[3] *A Textbook of Embryology.* By Henry Ernest Jordan, A.M., Ph.D., and James Ernest Kindred, M.A., Ph.D. New York and London: D. Appleton and Co. 1926. (Roy. 8vo, pp. xii + 613; 33 plates, 473 figures. 25s. net.)

Naturally, being designed for the use of students, the book is somewhat stereotyped in form, and contains illustrations many of which are already familiar to us through the works of other embryologists. Perhaps the most distinctive feature of the book lies in a series of so-called exercises, actually an abridged syllabus of the curriculum followed at the University of Virginia, supplemented by upwards of thirty plates made from original drawings. Another interesting feature is the attempt to widen the horizon of the student and to foster an interest in the history of embryology by the inclusion of chapters on such subjects as teratology, eugenics, heredity, and sex determination, as well as by brief biographical references to, and portraits of, certain of the more famous of recent workers in the science.

The book, while adding, perhaps, little to knowledge, is an admirable compendium of the subject, furnishing the student not only with all the information he requires, but also with an added stimulus to pursue independent inquiries. To anyone desiring a textbook of a size intermediate between Keibel and Mall's on the one hand, and McMurrich's on the other, the work under review can be safely recommended.

MEDICAL MEN AND CRIME.

DR. L. A. PARRY has collected a number of trials for various crimes, mostly committed by medical men, under the title *Some Famous Medical Trials*.[4] He begins his book with the trials of Weston and Franklin in 1615 for the murder of Sir Thomas Overbury, and ends with the prosecution of Dr. Hadwen in 1924. But the cases are given in no particular order—alphabetically, chronologically, or in accordance with the nature of the charge—so that Dr. Collins, the abortionist, rubs shoulders with Dr. Watson, the firebrand who was charged with treason in 1817, and the case of Dr. Hunter, the quack who sued the *Pall Mall Gazette* for libel, precedes a description of the torture of John Spreull of Glasgow in 1681 for the purpose of extorting a confession of treason. Dr. Parry disagrees with the view of Sherlock Holmes that when a doctor goes wrong he is the first of criminals, and supports Sir James Crichton-Browne in describing such offenders as the scum of the profession. He points out that all the notorious medical poisoners, such as Pritchard, Lamson, Neil Cream, and Palmer made egregious blunders. The stories of the various crimes and prosecutions are presented pithily and in a very readable manner. If we have one little complaint it is that, in expressing his own views on the trials of two or three hundred years ago, Dr. Parry does not seem to make allowance for the different standards of justice and mercy which were then held. The modern attitude towards the proceedings of the Star Chamber is of no more value historically than modern surprise at Sir Thomas Browne's views on witches.

ISAAC NEWTON.

THE memorial volume, *Isaac Newton, 1642-1727*,[5] edited for the Mathematical Association by W. J. GREENSTREET, naturally contains a great deal that only a mathematician can properly appreciate, but there are sections which appeal to the non-mathematical lay mind. Recently some notebooks have been recovered which are interesting as showing certain tendencies of Newton's mind as a boy and again in middle age, and facsimiles of some pages are evidence of the minute care with which he made notes of recipes for pigments, crayons, and conjuring tricks, and of projects for spelling reform. As is well known Newton had an almost morbid fear of controversy or criticism, and shrank from the thought of having to defend his statements. We do not think it is known that he was myopic, yet surely none but a short-sighted man could have written the minute script of his "Scheme for prosecuting counterfeiters and diminishers of the current coin," written when he was Master of the Mint. The articles on plagiarism in the seventeenth century and on Newton's metaphysics are both interesting contributions to the volume, as is also the description of his home in Lincolnshire and the King's School at Grantham, which he attended with distinction. Trinity College, Cambridge, and Newton are for ever associated, and the notes on the condition of the college in his time will interest lovers of the University. There is a short account of the paradoxers such as Morrison, better known as Zadkiel, and of Charles Palmer, who published in 1798 a treatise on the sublime science of heliography, wherein he claimed to have demonstrated that the sun was a body of ice, of the Hutchinsonians who denied the force of gravity, of Richard Brothers and his followers, and of the flat-world cranks and many others. A full list of portraits and of portrait medals is appended. The book is well illustrated.

[4] *Some Famous Medical Trials*. By Leonard A. Parry, M.D., B.S., F.R.C.S. London: J. and A. Churchill. 1927. (Demy 8vo, pp. x + 326. 10s. 6d. net.)

[5] *Isaac Newton, 1642-1727*. Edited by W. J. Greenstreet. London: G. Bell and Sons, Ltd. 1927. (Demy 8vo, pp. vii + 181; 9 plates. 10s. 6d. net.)

KNUD FABER'S LECTURES ON MEDICINE.

PROFESSOR KNUD FABER has published the four *Lectures on Internal Medicine*[6] which he delivered a year ago in the United States of America. The first covers some of the ground of his recent Schorstein Memorial Lecture at the London Hospital on achylia; the frequency with which this absence of acid occurs, both in children and adults, is clearly brought out, and the view is very definitely expressed that it is dependent on gastritis, which may be due to direct irritation, as by alcohol, or to poisons reaching the stomach by the blood stream; its congenital or constitutional origin is discredited. While it is admitted that transient achylia due to nervous influence may occur, recovery from achylia is not considered to be evidence against a causal gastritis, which must be regarded as just as much a disease as nephritis or hepatitis. In the interesting lecture discussing the intestinal origin of pernicious anaemia, the fallacy of regarding as atrophy of the intestine what are really *post-mortem* changes is demonstrated by the results of the author's observations on the microscopic appearances of contracted and dilated coils of intestine fixed in formalin directly after death. He accepts the hypothesis that achylia favours infection and intoxication with a protein, and points out that a protein intoxication should be characterized by symptoms of sensitization, desensitization, and anaphylaxis, and that the variations in the course of pernicious anaemia fulfil this anticipation. The account of benign glycosuria, like the previous lectures, is useful in containing references to Danish and Scandinavian work, much of which may not be familiar to English readers. The concluding article, "An historical sketch of medical therapy," is illustrated by portraits of Louis, Magendie, Moritz Schiff, and by representations of incidents connected with the copious venesections of the past.

NOTES ON BOOKS.

DESCRIPTIONS of different phases of the mental and physical welfare of children by various experts have been collected in a volume[7] of the Home and School Library, edited by C. W. KIMMINS, D.Sc. The health of the child as a factor in the formation of character is treated generally by Sir Bruce Bruce-Porter in a thoughtful chapter, while Mr. Bishop Harman contributes a most valuable account of the care of the eyes; which ought to be read carefully by all who have charge of children. Dr. G. Murray Levick discusses the influence of light on health, and the physical and mental hygiene of the pre-school child are dealt with by Dr. Eric Pritchard and Dr. A. Gesell, director of the Yale Psycho-Clinic in the United States. Dr. G. A. Auden considers the responsibility of local health authorities as regards children, and the needs of schoolboys and schoolgirls are respectively entrusted to the capable hands of Dr. G. E. Friend and Mrs. Meredith Clements. The training of teachers in health subjects is dealt with in a contribution by Jane Reaney, D.Sc. The comprehensive scheme of this volume, the simple and attractive style in which it is

[6] *Lectures on Internal Medicine (Delivered in the United States, 1926)*. By Knud Faber, M.D., Professor of Internal Medicine, University of Copenhagen. New York: Paul B. Hoeber, Inc. 1927. (Demy 8vo, pp. x + 147; 43 figures. 3 dollars.)

[7] *The Mental and Physical Welfare of the Child*. Edited by C. W. Kimmins, M.A., D.Sc. The Home and School Library. London: S. W. Partridge and Co. 1927. (Post 8vo, pp. 255. 6s. net.)

written, and the mass of practical details will ensure its popularity among parents and teachers, for whom it has been primarily compiled.

The second quarterly number of the ninth volume of the *Annals of Medical History*, edited by Dr. FRANCIS R. PACKARD, opens with an account by E. B. Krumbhaar of the stigmata of St. Francis of Assisi, whose portrait forms the frontispiece of the number. The "stigmata of the crucified" appeared on the hands, feet, and side of St. Francis after a vision of the crucifixion two years before his death. Dr. Krumbhaar, after referring to many subsequent similar cases, concludes that these stigmata are not beyond the realms of pathological possibility. A portrait of Dr. Nicholas Culpeper occupies the position of honour on the cover, and this "most confident of physicians" is, together with Laennec, considered, in the light in which Kipling represented them, by Dr. L. J. Bragman. Dr. R. T. Williamson contributes a sketch of Peter Mere Latham, who did so much to introduce auscultation into England and put forward views on medical education deserving attention at the present day. The scientific life of William Sharpey, who first systematized physiological teaching in London, is sketched by Dr. J. C. Brougher. In his scholarly and well illustrated account of Galen's studies at the Alexandrian School Dr. Joseph Walsh of Philadelphia describes Galen's teachers, and says that after studying geometry, astronomy, philology, philosophy, and the logical foundations of medicine, he wrote a great treatise on inductive philosophy in fifteen books or rolls, now lost, of which he was inordinately proud. Dr. Jonathan Wright contributes a long article on the Platonic Socrates and the Platonic Aristotle, which is the first instalment of an account of the evolution of the thought of Aristotle. The defence reactions—physical and spiritual, rational and distorted—adopted against the Black Death of 1348-49 are described by Dr. Stephen D'Irsay, who provides a long list of references. Dr. Le Roy Crummer writes on the *Anatomia Porci* of Copho, a somewhat hazy member of the Salerno School. The last article is by Dr. Frederick Eberson, on the dramatist Charles Goldoni, born at Venice in 1707, who wrote 150 comedies, some of which have a distinctly medical flavour. The energetic Editor contributes an account of Benjamin Waterhouse—a pioneer in American medicine—and a number of discriminating book reviews.

Dr. R. KING BROWN has rendered a very useful service in translating into English the second edition of Dr. O. BERNHARD'S comprehensive treatise on light treatment in surgery.[8] The book is divided into two parts, the first of which deals with light treatment generally from the historical, biological, pathological, therapeutical, and climatological standpoints. In the second part an account is given in detail of the indications for sunlight treatment in surgery, and there is a full description of heliotherapy in surgical tuberculosis. Much useful information is presented in an attractive manner, and numerous illustrations and tables are supplied. Dr. Leonard Hill contributes a characteristic foreword. There are many books on the subject, but this volume can be confidently recommended, for it gives a clear account of the science and art of heliotherapy, particularly in surgery.

That Savoy is a good place for a summer holiday most English people know, and this is what a handsome volume[9] recently received sets out to prove by means of photographs and words. It is a country of a few small towns and many villages and alpine farms. As Mont Blanc and its aiguilles are within its borders it has attractions for the climber, but it appeals also to the humbler souls content by choice or want of money to tramp over grass passes from one valley to another. The photographs, which include many of the Lake of Geneva, are well reproduced; the text is gossipy and very much a translation. It is a relief to turn from it to the preface Mr. Geoffrey Young has contributed to the English edition; in it he sympathetically discusses the philosophy of mountain rambling.

The full text of the Malcolm Morris Memorial Lecture, by Professor H. J. FLEURE, on *The Characters of the Human Skin in their Relations to Questions of Race and Health*, has now been published by the Oxford University Press (price 2s. 6d.). A report of the lecture was printed in these columns on November 20th, 1926 (p. 953).

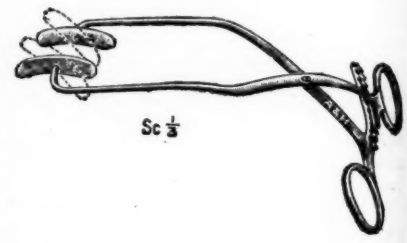
[8] *Light Treatment in Surgery.* By Dr. O. Bernhard. Translated by R. King Brown, B.A., M.D., D.P.H. London: E. Arnold. 1926. (Med. 8vo, pp. xii + 317; 105 figures. 21s. net.)

[9] *Rambles in High Savoy.* By François Gos. With a preface by Geoffrey Winthrop Young, and an introduction by F. Regaut. Translated by Frank Kemp. London: Longmans, Green and Co., Ltd. 1927. (6¾ × 9¾, pp. 169; illustrated. 21s. net.)

PREPARATIONS AND APPLIANCES.

Tonsillar Fossa Pressure Forceps.

Mr. L. Graham Brown, F.R.C.S. (London) has devised a modification of the Courtney-Yorke tonsillar pressure forceps with handles curved instead of straight, and ends kidney-shaped and movable to allow of more accurate adjustment to the tonsillar fossa and better compression. It can be applied to either tonsil, and can also be used in the reverse position. It has been specially designed for use in conjunction with the haemostatic tonsillar clamp, since it does not interfere, when left in position on the one tonsillar fossa, with the application of the clamp to the other tonsil and the subsequent dissection of the latter. The instrument is made by Messrs. Allen and Hanburys, 48, Wigmore Street, W.



A Pneumatic Splint Pad.

A correspondent writes: In the treatment of fractures of the leg the box splint is still pretty generally and successfully used, but I have found it advantageous to use a splint pad made by the North British Rubber Company, Ltd., Edinburgh. The pad is a hollow pneumatic ring, and is used in place of the "birds' nests" of wool formerly employed. The latter, often hard and irregular, frequently cause skin irritation or ulceration, particularly behind the heel. The new splint pad is comfortable, efficient, and relieves pressure. It maintains the heel in a constant relation to the posterior wooden surface of the splint. The pad does not alter in height after the heel is laid upon it; therefore, when the fracture is satisfactorily aligned, no change in the relation of the fragments should occur during the early weeks of union. As with the "birds' nests" several pneumatic pads are required for each case of fracture treated in the box splint. The pad consists of a hollow india-rubber ring, with a cord hollow 1 in. by 7/8 in., the wall of which is 3/32 in. thick, covered in stockinet, which prevents chafing of the skin from sweat. The inside diameter of the ring is 1½ in.

ROYAL MEDICAL BENEVOLENT FUND.

AT the last meeting of the Committee thirty-nine cases were considered, and £624 15s. voted to thirty applicants. The following is a summary of some of the cases relieved.

Daughter of M.D. who died in 1930; the applicant has been out of work for two years owing to illness. The Fund voted £60 to meet her training and other expenses to enable her to take the midwife's certificate.

Widow, aged 60, of M.R.C.S. who died in 1925. Suffers from bronchitis, asthma, heart trouble, and irreducible hernia; her only income is from letting her furnished house, from which she received £50, after paying the rates. Voted £26 in twelve monthly instalments.

Daughter, aged 65, of M.D. who died in 1918. Crippled with neuritis and dependent on her sister for attendance. This sister has had to be removed to a mental home, and the applicant is now entirely dependent on paid attendant. Her only income is £74 from investments, augmented by friends' help. Voted £5 and £26 in twelve monthly instalments.

Widow, aged 41, of L.R.C.P.Ed. who died in 1926. She was left with two children aged 7½ and 6½, and asked help for the children while young. Voted £26 in four quarterly instalments.

L.R.C.P. and S.Ed. 1891, aged 72, nearly blind through diabetes, is dependent on the charity of his landlady. His wife, upon whom he was entirely dependent, died last year. The Officers' Association gave help and the Fund voted £8 and £40 in twelve monthly instalments.

M.R.C.S. who died in 1921, leaving three sons aged 11, 9, and 6; one is at Epsom and the other two at an orphanage. These children are dependent on relatives, and help is asked to meet holiday expenses. Voted £15.

Daughter, aged 25, of M.R.C.S., who was trained as a teacher and has had a post for two years at an elementary school. To enable her to get a post in a secondary school she asks for help towards a year's training in needlework, which will cost £125. It was decided, after careful consideration, to vote £40 towards the fees and maintenance.

Subscriptions may be sent to the Honorary Treasurer, Sir Charters Symonds, at 11, Chandos Street, Cavendish Square, London, W.1.

The Royal Medical Benevolent Fund Guild still receives many applications for clothing, especially for coats and skirts for ladies and girls holding secretarial posts, and suits for working boys. The Guild appeals for second-hand clothes and household articles. The gifts should be sent to the Secretary of the Guild, 58, Great Marlborough Street, W.1.

British Medical Journal.

SATURDAY, AUGUST 6TH, 1927.

LUNACY LAW AND LAWYERS.

No one can justly assert that the greatest glutton for facts and opinions about lunacy administration has not had spread before him an ample feast in this issue of the JOURNAL and in the SUPPLEMENT for last week. Some readers may perhaps be inclined to think that there has been too much of one subject, but it seemed expedient to present the Memorandum of the British Medical Association on the Report of the Royal Commission on Lunacy, the debate in the Annual Representative Meeting at Edinburgh, and the discussion in the Section of Mental Diseases as nearly simultaneously as possible.

Broadly regarded, very considerable resemblance will be found between the criticisms and recommendations of the Memorandum and those of Professor Robertson in opening the discussion in the Section. He is bred to the administration of the law as it is in Scotland, but he has made himself well acquainted with the law in England, which he thinks very inferior. The difference is in a matter of principle. Under the Scottish law the position of the medical profession in the management and treatment of persons of unsound mind, or alleged to be so, is paramount; in England and Wales it is subordinated to an erroneous legal conception that has helped to mislead public opinion, which has never outgrown mediaeval ideas about mental disorders.

The English lawyers of 1890 acted *a priori*, did not study the facts of life, and allowed themselves to be so obsessed by the problem of the liberty of the subject and the fear of improper detention that, for one thing, they closed their minds to the really fundamental difference between remedy and custody. Judging by some of the remarks dropped during the hearing of Harnett *v.* Fisher, the attitude of many lawyers is much the same now. Professor Robertson did not mince his words: the English Act of 1890, he said, though designed for the welfare of the insane person, has turned out to be to his detriment, and thus affords one more example of how "laws enacted with the object of reducing the sum of human misery have, in fact, increased it."

Professor Robertson's remedy for the present discontent is to assimilate the English law to the Scottish, and he claims that the recommendations of the Royal Commission would go some way towards this. So does the Memorandum in effect. But it does more than discuss the reforms necessary; they will require legislation, which in spite of Sir Frederick Willis's hopes may not soon be introduced; there must, therefore, be some delay, and, moreover, any legislation proposed will almost certainly encounter much opposition, parliamentary, legal, and even public opinion being what it is. The Memorandum also gives sound advice (para. 60) to practitioners on the precautions they ought to take to make sure that they shall be able to recall, perhaps years after the event, the reasons why they acted as they did. It refers also in the following paragraphs (61 and 62) to some things done by "experts," in support of allegations of negligence, which had better not have been done.

The opposition in the Representative Meeting to the acceptance of the Memorandum as an equivalent to a report from the committee would seem to have been due in the main to a feeling that members had not had sufficient time for consideration of a document containing arguments and recommendations of great importance to the public, and to the profession in its everyday life—a document, moreover, on which the Association would be almost pledged to seek legislation. There are passages in the Memorandum which render it plain that the committee itself did not consider that it had finished its work; it makes specific reference to the resolution of the Representative Meeting last year (about Harnett *v.* Fisher) instructing the Council to take steps to protect the interests of the medical profession, and mentions the Hume-Spry case and that of de Freville *v.* Dill. The Chairman of the committee, in fact, asked that the Memorandum should be approved and referred to the Council, so that no harm seems to have been done by the decision of the Representative Meeting, which referred the Memorandum to the Council with the request that it should appoint a committee for further consideration of the Royal Commission's report.

Meanwhile, it can be said without hesitation that the profession is deeply indebted to the committee for preparing a very valuable Memorandum, which must have cost its members, and particularly its chairman, Dr. Langdon-Down, much time and labour. The Association is fortunate in having members ready to give their services so freely, and competent to handle a subject of great difficulty and complexity with so much ability and in language so clear and temperate.

THE METABOLISM OF TUMOURS.

THOUGH reiteration may often become a weariness to the flesh, it is sometimes salutary to the spirit. Repetition may not be the highest service of faith, but it has been found effective in keeping the inconstant mind of man from turning after false gods. This has been the experience of all the prophets. So, since science also is grounded in faith, we need make no apology for the repetition of a trite observation.

The problem of cancer is bound up in the wider problem of the nature of growth. To the lay mind, at all events, there is no question but that the most disconcerting characteristic of a tumour is that it grows. The immediate practical problem of the pathologist is, doubtless, the discovery of the agent responsible for imparting to normal cells their tendency towards disordered growth, but he will agree that the fullness of the problem will scarcely be apprehended until we are in a position to describe the processes of normal and malignant growth in precise physical definitions. In particular, it is an urgent question whether the growth of a neoplasm represents an intrinsic departure from the physiological routine of living cells, or whether it is but an undisciplined exhibition of normal metabolic processes. Every serious inquiry, therefore, into the intimate nature of growth processes in normal and malignant tissue is of the deepest concern to medicine. Some time ago we published a review of the volume on the metabolism of tumours by the brilliant German biochemist Otto Warburg, being the collected papers of original work prosecuted over a period of some years.[1] The great significance of the work, the appearance of further important extensions to the story, and the first signs of an awakening

[1] *Über den Stoffwechsel der Tumoren.* Von Otto Warburg. Berlin: J. Springer. 1926. (Roy. 8vo, pp. 263; 42 figures. R.M.16.50; bound, R.M.18.30.) A review appeared in this JOURNAL on December 11th, 1926. An extensive critical review by Mr. R. K. Cannan was published in the *Cancer Review*, July, 1927.

interest in this country, justify our returning to the subject in some greater detail.

Growth in physical terms means work. It means the storage of a definite amount of chemical energy in the material and structure of the cell. Growth, therefore, is conditioned by the nature and extent of the metabolic activity of the growing cells, and a comparison of the sources of energy of normal and malignant cells is a logical and urgent subject for inquiry. Such are the premisses from which Warburg has projected his investigations and his argument. One further principle is fundamental to the latter. We are accustomed to regard the ability to live and grow in the absence of oxygen as the peculiar prerogative of a limited number of the simple unicellular organisms. Recent progress in physiology has demonstrated how unjust is this reflection on the versatility of the cells of the higher animals. Whilst it is true that the higher animals depend constantly on an adequate supply of oxygen for their continued existence, it is also true that a pronounced anaerobic habit persists in many of the activities of individual tissues. They exhibit that form of fermentative activity which has been called glycolysis—the anaerobic decomposition of carbohydrate into lactic acid. This reaction liberates energy. We have, therefore, to distinguish two potential sources of energy for the cells of the higher animals. One is the combustion of carbohydrate by respiration, and the other the fermentation ("glycolysis") of carbohydrate. The investigations of Warburg were directed essentially to the determination of the relative contributions of these two processes to the energy metabolism of various normal and malignant tissues. The argument, it will be seen, is by no means abstruse, but the technique employed is difficult and involved, and this, together with the fact that the studies were made on tissues *in vitro*, has prejudiced that attention, repetition, and extension which the results undoubtedly merit.

Notable differences have been laid bare in this *in vitro* metabolism of various types of cells. Normal resting tissues show a high respiratory and a low glycolytic rate, embryonic tissues exhibit high respiration and high anaerobic glycolysis, and neoplastic growths have a lower respiration and a higher anaerobic fermentation. In the presence of oxygen the glycolytic rate is in all cases depressed below that evidenced under anaerobic conditions. In a recent paper Warburg[2] makes a very plausible argument for the conclusion that the degree to which glycolysis is depressed bears an exact quantitative relation to the amount of oxygen consumed in respiration. In normal and embryonic tissues the latter is sufficiently great, and the anaerobic glycolysis sufficiently low, to result in the almost complete suppression of fermentation in the presence of oxygen. Not so is it with malignant cells. There remains, in their case, a considerable glycolytic activity under aerobic conditions. Warburg, who describes this as the "excess fermentation," shows that it is, in the case of tumours, sufficiently great to make an important contribution to the total energy metabolism of the tumour under aerobic conditions, and that it is a value upon which may be based a useful classification of tissues which follows closely their growth rate and malignancy. A number of interesting exceptions to this classification have been disclosed, and these and some technical difficulties make the method of doubtful diagnostic value, although it remains of supreme physiological importance.

To what practical conclusion are we led? It would be tempting to surmise that the malignant cell is peculiar in its ability to derive energy for survival and growth by a fermentation process, even in the presence of oxygen. To relate such studies as these to the growth of a tissue is, however, very difficult, and at present little more has been achieved experimentally than to show that the survival of a tumour within the host does seem to be conditioned by the peculiarities of metabolism which have been defined by the studies *in vitro*. This is no mean achievement.

If these conclusions are true they would seem to offer little hope for the experimental control of malignant growth. It would be expected that cells which have a dual metabolic habit would be more difficult to restrain than normal cells with a purely respiratory metabolism. Some preliminary experiments on the intact animal, however, suggest that the situation is more promising than could be inferred. Reduction of the oxygen tension to which tumour-bearing animals were submitted resulted in a few hours in the death of the great majority of the neoplastic cells without injury to the normal tissues. Warburg finds an explanation for this anomalous result in the conclusion that the blood supply—that is, the supply of oxygen and carbohydrate—to the tumour is little more than adequate to its needs under ordinary conditions. Normal cells are more liberally treated. When oxygen or carbohydrate is experimentally restricted the tumour will be starved while yet the normal tissues are above the poverty line.

These observations are but a beginning, but they open wide the field for experimentation on the whole animal. They command attention to the whole subject of Warburg's thesis.

In conclusion, what shall we say of the origin of cancer? Warburg suggests an intriguing hypothesis. A tissue is a community of cells which exhibit wide individual differences in their respiratory and fermentative capabilities. Some few of the cells may be regarded as having the metabolic characteristics of neoplastic cells. These, being limited in number, will make no significant contribution to the aggregate metabolism of the whole tissue. Let, however, a local condition of anoxaemia supervene, and there will result the extinction of all the cells except those few that are able to derive the energy for survival and growth from fermentative activity—the potential cancer cells. These will survive, proliferate, and from them will derive a malignant growth. "Irritation" becomes "anoxaemia."

Warburg challenges both physiologist, pathologist, and clinician. The repetition and extension of his work in this country should not be longer delayed.

[2] *Biochem. Zeit.*, 1927, 184, 484.

THE BRITISH ASSOCIATION.

The British Association for the Advancement of Science will meet in Leeds this year. The inaugural general meeting will be held on the evening of Wednesday, August 31st, when the President, Sir Arthur Keith, M.D., F.R.S., conservator of the museum of the Royal College of Surgeons of England, will give his presidential address on Darwin's theory of man's descent as it stands to-day. The meetings of the Sections will begin on the following day, September 1st, and will continue until Tuesday, September 6th. The concluding general meeting will be held on September 7th. There will be twelve Sections. The president of the Section of Physiology is Dr. C. G. Douglas, F.R.S., of Oxford, well known for his researches on respiration and kindred physiological subjects. He will give his presidential address on September 2nd, and has chosen for

his subject the development of human physiology. The president of the Section of Psychology is Dr. William Brown, Wilde reader in mental philosophy in the University of Oxford, and consulting psychologist to the Bethlem Royal Hospital; his presidential address on mental unity and mental dissociation will be given on Monday, September 5th. The president of the Section of Anthropology is Professor F. G. Parsons, lecturer on anatomy at St. Thomas's Hospital, who in his address will discuss the Englishman of the future. The University of Leeds, at a special degree ceremony on December 6th, will confer the honorary degree of LL.D. on Sir Arthur Keith, and that of D.Sc. on Dr. J. S. Haldane, F.R.S., of Oxford. Two evening discourses to members will be given in the Albert Hall: the first on the evening of Friday, September 2nd, by Professor R. A. Millikan, of the California Institute of Technology, on cosmic rays; and the second on Monday, September 5th, by Dr. F. A. E. Crew, director of the Animal Breeding Research Department and lecturer in genetics in the University of Edinburgh, on the germ plasm and its architecture. Public lectures will be arranged in Leeds and neighbouring towns. A civic reception will be held in the Art Gallery on the evening of September 1st, and a reception will be given by the University of Leeds on the evening of September 6th. A large number of excursions have been arranged for Friday, September 2nd, for Saturday, September 3rd, and Sunday, September 4th, and on Monday, September 5th, a party will go by way of Harrogate to Plumpton Rocks. Leeds is a city of many industries, and visits to works and factories in and near the city have been planned.

THE VOLUNTARY HOSPITALS COMMISSION.

AT the thirty-sixth meeting of the Voluntary Hospitals Commission on July 6th, Lord Onslow, Lord Clwyd, Sir Robert Bolam, Dr. Buist, Mr. Wade Deacon, and Dr. Menzies were present. Memorandums summarizing the position regarding extensions of accommodation in voluntary hospitals were considered. Dr. Menzies inquired how much of the additional accommodation indicated in the tabular statements could be regarded as strictly new accommodation and not merely beds released for their original use after having been diverted to special purposes —for example, in connexion with war services. The chairman said that an attempt should be made to verify the information which had been collected by the Commission's staff, and he suggested that a draft report might be prepared and the appropriate portions circulated to the local committees for their observations. The draft would then be revised in the light of the information obtained from the local committees and circulated to the Commission for their observations. The Commission approved this course, and the chairman suggested that a map should be prepared to show particularly the areas in which little additional accommodation had been provided. Sir Robert Bolam raised the question of the continuance of the Commission, and asked that an opportunity should be afforded for discussing its future. The chairman said that the Minister desired the Commission to continue in existence particularly as a link between the Government and the local committees. It was thought that the Commission might give the Government valuable help in connexion with the redistribution of hospital accommodation if a measure of Poor Law reform were passed. Sir Robert Bolam asked that the consideration of the continuance of the Commission might be put on the agenda for the next meeting.

MUSIC AND MILK.

AMONG dairy folk there is a belief that a cow will yield more milk to a singing milker than to one who omits such "soothing stimulation"; indeed, the matter seems to go further, for some cows are said to discriminate, only giving full measure, or it may be any milk at all, in response to a particular melody. A practical trial of the effects of music was made in Germany in 1924, concerts being provided in the stalls at milking times on certain days. Secretion of milk takes place in two phases—slowly between milkings and rapidly (two-thirds of the total) during these operations. It was found that on concert days this latter secretion was increased by 6 per cent. compared with tuneless days, when the instrument employed was the gramophone or violin. It is hardly surprising that so pacific a function as milk-giving was not favourably influenced by the martial strains of the trumpet. On the concert days the total solids and fat of the milk were increased in amount but lessened in percentage. Nebert and Koch[1] of Halle have tried to apply these observations to wet nurses, who were taken from their homes and placed in quiet comfortable surroundings; they gratefully responded to this treatment by an increased yield of milk, but they seem to have been less musical than the cows, for no further increase resulted on days when a gramophone played Handel's Largo and the Tales of Hoffman during resting periods, and brisk marches during actual nursing; perhaps instrument, composer, and type of music were not happily chosen. The women tested all had a good natural flow of milk; Nebert and Koch mean to make further tests with women whose milk is failing or scanty. Now that broadcasting has made music available throughout town and country, perhaps large scale experiments may be made in dairy farms and infant clinics, but it will be harder than ever for the B.B.C. to frame generally acceptable programmes if the requirements of the milk trade and of nursing mothers have to be considered. So much for the favourable influence of music. Is there risk of harmful effect? Little positive evidence is available, but the German trials with the trumpet suggest caution, and even before the days of saxophone and jazz band we had heard of "the tune that the old cow died of," and a well known Scottish divine used to tell how, in boyhood, his cornet playing was first banned from the manse because it spoilt his father's sermons, and later from the hay loft because the cows in the byre below gave sour milk. Recent Chinese law[2] has specifically forbidden the sale of "milk having blue, purple, and other colours." Can it be that such startling dairy phenomena have resulted from the effects of Chinese music upon imported milch cows?

THE FAT-SOLUBLE VITAMINS IN MILK.

DURING the past decade evidence has accumulated steadily to show the importance to the health of infants of an adequate supply of fat-soluble vitamins. This fact has naturally prompted many investigations into the factors influencing the fat-soluble vitamin content of cow's milk. The earlier experiments were somewhat inconclusive, because they did not distinguish clearly between vitamin A, the growth-promoting factor, and vitamin D, the antirachitic factor. It is now known that green vegetables contain a rich supply of vitamin A but relatively little vitamin D. Feeding experiments on cows (Luce, 1924, Chick and Roscoe, 1926) showed that a ration rich in green fodder increased the vitamin A content of milk but had only a slight effect on the antirachitic factor. The problem of practical importance is to find a diet which will ensure that the cow's milk contains an adequate supply of both vitamins. The milk of pasture-fed cows contains both vitamins, but the difficulty is to produce an adequate content of vitamin D in winter milk. Golding, Soames, and Zilva[3] have show that, whereas green fodder in the winter ration of the cow raises the vitamin A content

[1] Nebert and Koch: *Monatschr. f. Kinderheilkunde*, 1925, 33, p. 385.
[2] Ting-An, L.: *Nat. Med. Journ. China*, 1925, 11, p. 324.
[3] Golding, Soames, and Zilva: *Biochem. Journ.*, 20, p. 1306.

but not the vitamin D content, yet addition of cod-liver oil to the cow's ration raises both the vitamin A and the vitamin D content of the milk; but unfortunately large doses of cod-liver oil decrease the fat content of the milk. These results are, however, of practical importance, since they indicate a method by which cow's milk of fairly high antirachitic potency can be obtained in winter. Moreover, they provide experimental support for the administration of cod-liver oil to nursing mothers to produce an antirachitic action in breast-fed infants.

ETHNOLOGY AND DISEASE.

IN a paper written shortly before his untimely death, Dr. S. T. Darling showed how the study of the geographical distribution of human parasites might throw light on the place of origin and migrations of races of mankind. Conversely, Ramsay[1] has invoked the aid of ethnology in support of his view of the origin of yaws among the tea-garden coolies of Assam. Powell believed that yaws in Assam could be traced to the arrival from Ceylon in 1877 of an infected coolie girl. There seems little doubt that this girl and her sisters, whom she infected, were the cause of a considerable local spread, but Powell would trace the spread throughout and even beyond Assam to the same source. Ramsay admits that such importations occur, but he noticed that those tea-gardens where yaws occurred were generally near the villages of hill tribes—Nagas, Kukis, Lushais, and Manipuris—or there was evidence of contact with these tribes in bazaars. There was, in fact, a Manipuri village in the middle of Powell's tea-gardens. When these tribes were investigated, yaws was found to be rampant among the first three and common in the fourth. In some Kuki villages practically every person was suffering or had suffered from yaws, though the disease was thought by a local missionary to be syphilis. This prevalence was very striking as compared with the comparative scarcity of framboesia among tea-garden coolies. The history of these tribes has been studied with the aid of several ethnological authorities. Immigration to the Assam hills has been from south to north. The Nagas appear to have arrived first of the present tribes; they show definite affinities with the natives of the Pacific Islands, and still have a suggestive fondness for marine shells; they are of Caspian stock mixed with Negrito. The Kukis, of Alpine (or Palaeo-Alpine) and Mongolian stock, came later from China or Thibet, and they too have absorbed much Negrito blood, as can plainly be seen in their women. The Lushais are believed to have come from the Chin Hills of Burma in the eighteenth century, and they and the Kukis are certainly of the same race as the Burmese Chins. The ethnological facts seem to connect the yaws of Assam with that disease in Burma, Malaya, and the Pacific Islands; and Hutton, who is quoted by Ramsay, suggests that the link is the negroid blood with which yaws is associated over most of the world, though if that blood has acted as the distributing agent the disease must have been present in Assam before the arrival of the invading tribes, for the aboriginals of the Assam hills were Negritos of Andamanese type. Ramsay propounds the possibility of a common origin of yaws for all the Far East, or perhaps for the Old World. It seems not impossible that links with the New World might be found.

SWINE ERYSIPELAS IN MAN.

SWINE erysipelas is a disease of pigs by no means uncommon in this country, and the cause of a considerable loss to farmers. It is characterized by the appearance of red, diamond-shaped blotches on the skin, and by the development of vegetations on the valves of the heart. The latter lesion has in recent years attracted the attention of comparative pathologists, mainly because of its resemblance to somewhat similar lesions associated with cardiac rheumatism. Its resemblance to that condition has proved to be more apparent than real, but it has been found to be very similar to the ulcerative endocarditis of human beings caused by streptococci, gonococci, and pneumococci. In this, as in swine erysipelas, the inflammation of the valve proceeds from the surface inwards, whereas in rheumatic carditis the inflammation commences in the depth of the valve and spreads towards the surface. The disease in pigs is caused by a specific bacillus, and numerous instances have been recorded in which human beings were infected with it, and developed an erysipeloid condition of the skin. The infection in man generally occurs through inoculation; and there is a tendency to regard the erysipelas of Rosenbach as identical with it. Klauder, Righter, and Harkins[1] have recently made a detailed study of a very similar condition occurring in fish handlers. Rosenbach's erysipeloid is seen most often in persons who handle game and fish, and is as a rule confined to the hands near the point of inoculation. The lesion consists of a sharply defined, slightly raised, reddened area, with few if any general symptoms; it has an incubation period of one to six days. Swine erysipelas in man is rather more severe in its symptoms, and lymphangitis may be present. The existence of a heart lesion has not yet been demonstrated. The series of outbreaks recorded in this paper occurred in fishermen on the sea coast of New Jersey. The lesions commence within twenty-four hours after a bite from a fish or a prick from the spine or scale, and the disease lasts from four to six weeks. The sore is conspicuous and painful; the lymph glands are affected, and headache and fever are common in the early stages. Similar but milder symptoms are seen in those who handle the fish later. This erysipeloid condition is quite different from the other skin diseases of fishermen such as dermatitis from nets, etc., and urticarial eruptions associated with new hemp nets or from contact with fish such as the Portuguese man-of-war, and "stings" of various fish such as electric eels and catfish. Three strains of this bacillus are generally recognized—human, porcine, and murine; the authors believe that it may be necessary to add a fourth—a piscine—which is pathogenic to white mice and pigeons, but not to field mice; apparently it has a high virulence to man. The bacillus of swine erysipelas (*B. rhusiopathiae* or *B. murisepticus*) is apparently pathogenic to all groups of vertebrates, but its virulence varies with the different animals, and may be altered by passage. Man is relatively resistant to ingestion, but may be infected through the skin. It would seem that we may recognize at least three human conditions due to this organism: the erysipeloid of Rosenbach; "fish poisoning," as this condition is called locally; and finally human swine erysipelas. These conditions differ only in severity, the last being the most acute.

THE PERIODS OF EUROPEAN MEDICINE.

IN a paper read before a meeting of the Devon and Exeter Medico-Chirurgical Society on February 17th, 1927, and reported in our columns on March 5th (p. 429), Dr. W. Gordon of Exeter reviewed in the brief space of an hour the medical history of twenty-five centuries. The text of this scholarly sketch, "The periods of European medicine," has now been privately printed, and bears eloquent evidence of the writer's literary grasp and reading. But particular attention may now be directed to his method of treating the subject—namely, by making natural divisions of the centuries into periods, and by showing the reactions of medicine to changes in the environmental conditions. Three great natural periods are distinguished—the rise, mainly Asiatico-Greek, from 600 B.C. to 200 A.D.;

[1] Ramsay, E. C., *Trans. Roy. Soc. Trop. Med.*, April, 1927, p. 506.

[1] *Arch. Dermat. and Syph.*, xiv., 662-678.

the pause, from the death of Galen to about 1500 A.D., when the Italian renaissance reached and revivified medicine; and the reascent, from that time to this. Each of these three main periods has three subdivisions; thus the rise starts with the pan-Hellenic phase, lasting three centuries, is followed by the Alexandrian epoch of two centuries, and then by three centuries of Roman activity. The pause, commencing with a gap of 150 years of chaos, included the Byzantine portion (324-700 A.D.), beginning with the writings of Oribasius, the Arabian (700-1300 A.D.), and a third subperiod which Dr. Gordon associates with magnificent architecture, carving, and glass. The reascent begins with a North Italian subperiod of a century's duration, and then passes into the trans-European phase down to 1840, when what is called the pan-Cosmic subperiod is reached. These divisions and subdivisions are made clear to the eye by a diagram in the reprint. Stress is laid on the greater sensitiveness exhibited by medicine to liberty of thought, and on the later maturity of medicine as compared with art or letters. In addition to this general consideration of the evolution of medicine, Dr. Gordon gives much detailed information about the men who have played prominent parts in the history of our art and science.

A NEW DIPLOMA IN ANTE-NATAL CARE, MIDWIFERY, AND INFANT WELFARE.

THE Examinations Committee of the Society of Apothecaries of London, as recorded in our issue of July 30th (p. 193), has decided to recommend the governing body to institute at an early date a special diploma in ante-natal care, midwifery, and infant welfare. It would be granted to registered medical practitioners who had been engaged in post-graduate study of the subjects, both in practice and theory; a high standard of professional knowledge would be ensured by a stringent examination. The diploma is intended to meet the needs of the general practitioner who wishes to show that he possesses knowledge and experience in these subjects of a higher grade than that required for legal qualification. It is not proposed to limit the diploma to licentiates of the Society of Apothecaries, but to throw it open to all registered medical practitioners.

MR. F. G. HALLETT.

MR. F. G. HALLETT has notified his intention to retire in December next from the office of secretary of the Conjoint Examining Board in England. When this resignation takes effect it will bring to an end an active career of fifty years passed in the service of the medical profession. Mr. Hallett joined the office staff of the Royal College of Surgeons in December, 1877, became assistant secretary to the College in 1882, and was appointed secretary of the Conjoint Examining Board in England when that body was instituted in January, 1886. The Committee of Management of the Examining Board, with regret, recommended the Colleges to accept Mr. Hallett's resignation, and the Royal College of Physicians, at its meeting last week, passed unanimously and cordially a resolution of thanks to Mr. Hallett. Mr. Hallett has won the esteem and friendship of succeeding members of the Committee of Management and of the Board of Examiners. He has always been remarkable for his courtesy and readiness to help, and in the course of his long service has become a mine of information with regard to the conduct of examinations—in fact, his reputation is world-wide; he visited the United States some years ago to give advice on the subject, and has also given his help with regard to the adjustment of such matters in Egypt. In consenting to illuminate the Roll of Honour of the British Medical Association Mr. Hallett disclosed one of his hobbies. The Roll, which is now preserved in the Library in the Association's House, contains the names of the members who gave their lives for King and country in the great war, and when the King and Queen in 1925 came to open the House they visited the Library and inspected the Roll. They congratulated Mr. Hallett on its completion, and asked him how many hours he had spent on the task. The reply was 430. On this occasion the King accepted from Dr. J. A. Macdonald (Chairman of the Journal Committee) a copy of the Roll, bound in morocco, each page being reproduced by photo-mechanical means. All who have worked with Mr. Hallett, or have known him in other capacities, will wish him many years of life in his country home.

A FRENCH VIEW OF EARLY MEDICAL EDUCATION.

WITH the ever-increasing amount of knowledge the problems of medical education, and especially of the standard to be required before entry to the profession, and the organization of the preliminary teaching of the basic sciences—chemistry, physics, and biology—are rightly receiving anxious attention. The inevitable tendency now is to throw back on to the last year or more of school life the teaching of these subjects, and thus to obtain more time in the overladen curriculum for clinical teaching. This course, however, entails some degree of early specialization, and so may encroach on the acquisition of a general education in letters. The amount of physical and chemical knowledge required for medical education has, of course, greatly increased, and with the object of finding a means whereby this end could be attained without, if possible, encroaching unduly on the opportunities for general culture, a committee of the Académie de Médecine of Paris was appointed in December, 1926. The committee in its report[1] has recommended that, on the one hand, students intending to take up medicine should be obliged to present two baccalaureat diplomas—one for compulsory Latin and optional Greek, the other for mathematics; and, on the other hand, that the scientific instruction given in the preparatory year of medical studies should be provided in the Faculty of Medicine and the medical schools, instead of, as at present, in the Faculty of Science.

THE HUGHLINGS JACKSON LECTURE.

ONE of the events of the conference in London between the Section of Neurology of the Royal Society of Medicine and the American Neurological Association in London—of the opening of which we gave some account last week—was the delivery by Dr. Charles L. Dana of the Hughlings Jackson Lecture. Dr. Dana said American neurologists came first under the influence of Charcot, then were attracted by Erb, Kussmaul, and the Germans, and a little later perhaps felt the inspiration of Jackson's work. His own earliest recollection of American neurology was as an intern; after that he received an appointment to a neurological clinic. Of the four men in New York in those days who were most active in psycho-neurological matters, and gave a certain forceful touch to the subject, one was Dr. Edward C. Spitzka, finely trained in anatomy under Meynert of Vienna, who was very scornful of American work, and violently antagonistic to the United States methods of caring for the insane at that time. Another, Dr. W. A. Hammond, was the dominant personality of the day; but a man of much more original and brilliant type was Dr. George M. Beard, who first proclaimed and consistently taught the importance of noting and evaluating subjective symptoms; he eloquently described the nervous characteristics of American life and of the American people, and was the first to indicate the importance to the State and the community of preventive methods along this line. Dr. Dana believed that this was the most important single

[1] *Bull. Acad. de méd. de Paris*, 1927, 3e. sér., xcvii, 291.

problem in neurology and sanitation to-day. At the time of his early acquaintance with Beard, Garfield, the President of the United States, was assassinated by Guiteau. Dr. Dana, in conjunction with Dr. Beard, examined Guiteau, assisted at his necropsy, received part of the brain, and made a formal report. These were the days when Lombroso flourished in Italy, and when Moritz Benedict, in Vienna, had just written upon the cerebral fissures. The fourth man in the New York group was Dr. Edward C. Seguin, by far the best trained of the American neurologists of that day. His influence in developing precise methods of examination, his interest and skill in therapeutics, and his devotion to his patients, made a great impression and greatly helped to improve neurology. He was a believer in drugs, as were Beard and Hammond, and was inclined to give large doses. It was the period when potassium iodide was given to the extent of 300 or 400 grains daily. Tincture of nux vomica was used by Seguin in doses of half a drachm or more, and hyoscine up to one-sixth of a grain. Bromides were also given massively, and periodic bromidization was employed in epilepsy. Dr. Dana thought the practice admirable in trained hands. The American Neurological Association was organized, and a *Journal of Nervous and Mental Disease* was founded at the end of the nineteenth century, the prime mover being Dr. Jewell of Chicago. Thirty years ago in New York there were only three nerve clinics and no special hospital. Now there were many well attended clinics, a neurological hospital, and several important neurological departments in the general hospitals. Preventive neurology was a phase of work that was of high importance, though it had been greatly neglected. There were many chronic nervous diseases, such as paralysis agitans and disseminated sclerosis, with an enormous literature which ignored the question of prevention. Americans were a nervous race, using the term in the sense that nervousness meant an exaggeration of physical and mental activity. Nevertheless, the nervous disposition was the highest form of constitutional make-up; on the whole, it was well to have some degree of nervousness as an impelling force in a nation and community. He was opposed to the prevention of neuroses by the development of lymphatic and melancholic temperaments.

THE COMPILATION OF VITAL STATISTICS IN PORTUGAL.

THE first census of Portugal on a modern plan, comprising locality, age, sex, civil condition, occupation, and other points, was carried out in 1864, and the second in 1878. In 1887 it was affirmed by law that there should be a decennial census, the years selected being those whose terminal digit was a zero. This enactment has been thrice in operation—in 1900, 1911 (replacing 1910, which witnessed the revolution), and 1920. At the census of 1920, for which December 1st was the appointed day, the household schedules, as narrated in a recent account by the League of Nations of the official procedure, were distributed and recovered by census agents, who passed them on, after scrutiny, to the local census committees, and the local committees in turn transmitted them, after inspection, to the Director-General of Statistics in Lisbon. The data so gathered formed the raw material for the report of the census for 1920, which has been published in four volumes. The Director-General, in his preface to the report, states that locally appointed agents struck for higher remuneration on the eve of the appointed day, that in some cases they did not take the census on the date fixed, and that they omitted to recover a proportion of the schedules they had distributed. He indicates that the organization by the local census committees was inefficient, and may be presumed to have viewed the figures supplied to him with some tincture of misgiving. He reports that the population of Continental Portugal, excluding the Azores and Madeira, was 5,621,997 in 1920, and its area 34,254 square miles. Registration, the complement to the census for statistical purposes, formerly in Portugal entrusted to the clergy, has since 1900 been in the hands of civil authorities. In 1911 it was made compulsory, and failure to register is now a penal offence. Every live birth must be declared within one month at the local registrar's office by the father, or other specified person in his default. A similar rule obtains for stillbirths, the period of gestation being recorded in both cases. Every death must be declared immediately, in presence of two witnesses to the fact of death, by the nearest relative, or other specified person in his default. The medical practitioner who attended the deceased in his last illness must hand to the family a certificate of the fact of death and its primary and contributory causes. Registration summaries are sent monthly to the central statistical department from all local areas. The birth rate of Portugal, from 1913 to 1920 inclusive, ranged between 26.4 and 33 per thousand. The death rate, from 1911 to 1920 inclusive, ranged from 19.4 to 40.2, the latter high figure belonging to 1918, the influenza year. In 1920 it was 25.5. Two causes of death show a disparity with English returns. For cancer the frequency ratio of Portugal to England is as 1 to 4; for ill defined causes as 10 to 1. This low cancer rate, combined with a high rate for ill defined causes, is probably a matter of diagnosis. The birth rates and general death rates quoted may reflect the facts; they may, on the other hand, be misleading—if, for example, the annual population on which they are based, calculated presumably from the census of 1911, were underestimated. As regards the census for 1911 no opinion can be expressed. As to the census of 1920 the comments of the Director-General may be left to speak for themselves. Had control been rigidly centralized it is likely that the irregularities to which he refers would have been substantially reduced. Be that as it may, an essential requirement for the compilation of vital statistics in Portugal or any other country is a sound population figure.

BIRTHS AND DEATHS REGISTRATION ACT, 1926.

MR. GEORGE P. STRATHEARN, honorary secretary of the Association of Registrars of Scotland, informs us that a number of medical practitioners in that country are sending death certificates direct to registrars under the impression that they are required to do so by the new Registration Act. It should be noted that this impression is erroneous. The Births and Deaths Registration Act, 1926, the new Act in question, does not apply to Scotland or Northern Ireland. Any change of procedure which it involves affects England and Wales only.

THE ANNUAL MEETING: TWO CORRECTIONS.

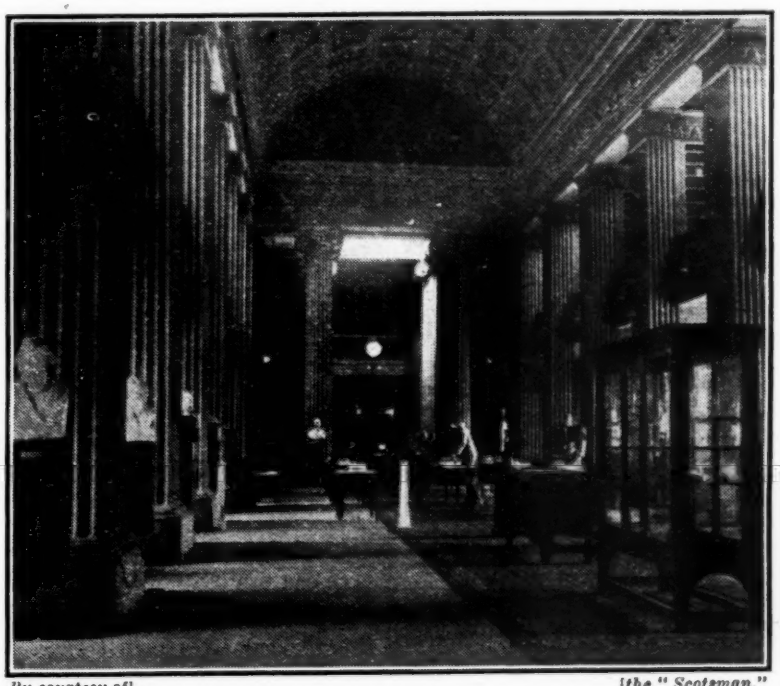
IN our reports last week of the Annual Meeting of the British Medical Association at Edinburgh, there were two mistakes which need early correction. The number of those attending the Annual Dinner was in fact more than twice the figure mentioned. No fewer than *678* members of the Association and guests were present. Again, the winner of the Ulster Golf Cup this year is *Dr. A. J. Cronin*, not Dr. J. A. Cromie, as stated at p. 79 of the SUPPLEMENT.

BY an Order of the Committee of Privy Council, Sir Hugh K. Anderson, M.D., F.R.S., Master of Gonville and Caius College, Cambridge, and Professor T. R. Elliott, M.D., F.R.S., Director of the Medical Unit, University College Hospital, London, have been appointed members of the Medical Research Council into the vacancies caused by the retirement of Sir Frederick Andrewes and Sir Cuthbert Wallace.

THE HISTORICAL MEDICAL EXHIBITION AT THE EDINBURGH ANNUAL MEETING.

IN connexion with the History of Medicine Section at the Edinburgh Meeting of the British Medical Association, an interesting historical medical exhibition was shown in the Upper Library Hall of the University. A large portion of the exhibits were lent by the Wellcome Historical Medical Museum, by the courtesy of Mr. Henry S. Wellcome, who was one of the vice-presidents of the Section.

Surgery became a science in recent times, not so much through individual skill as through the introduction of two new factors—anaesthesia and antisepsis. The earliest surgical instrument was in all probability some fragment of flint or of fish's tooth, with which blood was let, abscesses emptied, tissues scarified, skulls trephined, and, at a later date, operations like circumcision performed. Trephining for epilepsy goes back to primitive times, the bits of skull excised being used for amulets. Primitive man's wounds were dressed with moss or fresh leaves, ashes, or natural balsams, and, when poisoned, were treated by sucking or cauterization. Cupping was performed by means of animals' horns. For couching a cataract or opening an abscess even a sharp thorn sufficed, but in more advanced stages of development pieces of hardened wood may have been pointed and edged like the flint knives. Examples were shown of knives belonging to medicine-men from the Congo, as well as various Sudanese surgical instruments, and glass surgical knives from Mexico, Australia, and other places. There were also horns and gourds to illustrate the evolution of the cupping vessel, along with specimens of Roman and Arab cupping vessels, and specimens of shells, stone knives, etc., showing the development of the lancet from the sharpened finger-nail, through the stage of the thorn and bamboo, to the modern instrument.



By courtesy of] [the "Scotsman."

THE HISTORICAL EXHIBITION IN THE LIBRARY HALL, EDINBURGH UNIVERSITY.

Specimens of surgical instruments of the sixteenth, seventeenth, eighteenth, and nineteenth centuries were also shown. These were mainly knives and saws for amputation, and instruments for extracting bullets from wounds, and there was also a curious instrument, first described by Guy de Chauliac in 1300, for widening a wound in order to extract an arrow-head.

The chief method of Greek healing was by recourse to the Temples of Aesculapius, where advice was received by the patient in a dream interpreted to him later by the priests. If the treatment was successful the patient then presented a thank-offering to the god, usually a model of the diseased part in wax, silver, or gold, while a votive tablet, giving the history of his case and its treatment, was suspended in the temple. These tablets formed the permanent clinical records of the Coan and Cnidian schools of medicine, in the first of which Hippocrates was himself a pupil. Several interesting examples of these votive offerings were exhibited, including plaques showing internal viscera, a fragment of a trunk showing digestive organs, and several small figures of diseased patients.

The highest point of development in ancient surgical treatment was reached in India. In the Susruta (fifth century A.D.), one of the three leading texts of Brahminical medicine, about 121 different surgical instruments are described. These include scalpels, lancets, saws, scissors, needles, hooks, probes, directors, sounds, forceps, trocars, catheters, syringes, bougies, and a rectal speculum. The Hindus apparently knew every operative procedure except the use of the ligature. All these instruments were properly handled and jointed, the blades sharp enough to cut a hair, and kept clean by wrapping in flannel in a box. Examples of all the instruments mentioned above were shown.

Under the Romans surgery attained a degree of perfection which it did not again reach till the time of Ambroise Paré. Surgical instrumentation, in particular, was highly specialized, and in the ruins of Pompeii over two hundred different surgical instruments were found. Herniotomy and plastic surgery were known, as well as the operations for cataract, version, and Caesarean section. In this section of the museum were shown specimens of specula, catheters, elevators, trocars, cauteries, and forceps belonging to the first century A.D., with a twentieth century example of the same instrument alongside. It was interesting to note the striking similarity between each pair of specimens, maintained over this period of two thousand years, many of the modern instruments being practically identical with their ancient prototypes.

Surgery in Scotland was revolutionized in the sixteenth century by Peter Lowe, who had been a surgeon in the French Army, and in 1599 came to Glasgow, where he founded the Faculty of Physicians and Surgeons. A set of dental instruments of types described by Peter Lowe was shown, as well as French pocket instrument cases of the eighteenth and nineteenth centuries, and there were numerous specimens of scarificators. All these exhibits were from the Wellcome Historical Medical Museum, London. The medicine chest of Prince Charles Stuart, lent by the Royal College of Physicians of Edinburgh, was also shown.

An excellent idea of the conditions of early and mediaeval medical and surgical treatment was to be gained from the many black-and-white and coloured illustrations displayed in the alcoves of the hall. They were divided roughly into illustrations of physicians and patients, depicting clinical methods, etc., of the thirteenth to seventeenth centuries; cauterization, which was shown as being used for epilepsy, falling sickness, sciatica, difficulty in breathing, and for diseases of the lungs, kidneys, liver, spleen, bladder, etc.; bleeding, which was employed with great freedom as a remedy from early times; surgical procedures, illustrating operations for stone, fractures, tooth-drawing, reduction of dislocations, circumcision, and military operations, mainly amputations; and anatomical illustrations, which consisted chiefly of diagrams of the human body showing the veins for blood-letting and pictures of anatomical instruments. These also were lent by the Wellcome Museum.

An interesting collection of obstetrical instruments from the Obstetrical Museum of the University of Edinburgh was on view, and at the other side of the hall there was a collection of engravings from the Royal College of Physicians of London. These included portraits of Linacre

and Caius, and passed on to Sydenham, Harvey, Willis, and other celebrated physicians of the seventeenth century. Many of the physicians of the later Stuart and Queen Anne periods, such as Sir Richard Blackmore, Sir Samuel Garth, Sir Hans Sloane, Dr. Richard Mead, and Dr. John Radcliffe, were also represented. Good engravings of Sir James McGrigor, John Hunter, Edward Jenner, Sir Charles Hastings (the founder of the British Medical Association), and other men eminent in the nineteenth century, completed the series. The collection was one which well repaid inspection, both on account of its medical associations and its artistic merit.

A collection of pictures of former teachers in the Edinburgh medical school was another noteworthy feature of the exhibition. These included physicians such as John Rutherford, the first lecturer on clinical medicine in the Royal Infirmary, the celebrated William Cullen, Archibald Pitcairne, John and James Gregory, Professors Hughes Bennett, Alison, Sir Thomas Grainger Stewart, etc. Among the surgeons there were fine portraits of Robert Liston, Sir William Fergusson, James Syme, and James Miller, and there were also groups showing professors and teachers in the Edinburgh school at different epochs.

A series of portraits of eminent past students of Edinburgh included three generations of Darwins—Erasmus Darwin, Robert Waring Darwin, and Charles Darwin—and a number of engravings of portraits by the celebrated Scottish painter Raeburn, including Professors Thomas Charles Hope, Joseph Black, Alexander Monro, and others. There was also an interesting collection of pictures of celebrated American physicians and surgeons who graduated at Edinburgh.

A series of water-colour sketches by Sir Daniel Wilson, showing various old Edinburgh buildings, and particularly several views of parts of Trinity Church and Hospital, was on view. These are the property of the University of Edinburgh. In the cases there were numerous illuminated manuscripts and old printed books, many of them medical, the property of the University. There was also an interesting collection of relics of Dr. John Fothergill, including diplomas, letters, books, and personal possessions, together with many other objects of medical and historical interest.

The exhibition was visited by over 5,000 members of the British Medical Association and of the public during the four days that it remained open.

RESULTS OF TREATMENT OF UTERINE CANCER.

ONE of the more important reports on medical subjects published by the Ministry of Health is that issued last month under the title of "Cancer of the uterus: a statistical inquiry into the results of treatment, being an analysis of the existing literature."[1] The report is written by Dr. Janet E. Lane-Claypon and is based on an examination of data contained in medical publications at home and abroad prior to March, 1926. The articles examined are derived from sixteen different countries, are 848 in number, and relate to the records of some 80,000 cases of the disease. The mere collection and sifting of the data from this mass of material must have been a work of great magnitude, and the results, embodied in twenty-four variously classified appendixes, will form a permanent work of reference the value of which cannot fail to be appreciated by those interested in the subject. In addition, the author has applied statistical methods in extracting several deductions of great interest. The most important of these relates to the relative values of abdominal hysterectomy and radiation in the treatment of carcinoma of the cervix uteri, the figures pointing to the conclusion that for the cure of the disease, that is to say, to obtain a survival rate of five years and over, treatment by radium is almost as efficient as abdominal hysterectomy. This conclusion is based on cases reported from Germany, Austria, America, Sweden, France, Switzerland, and Belgium, England being conspicuous by its absence from the list. Referring to this point, Sir George Newman, in his prefatory note, remarks: "One is impelled to inquire whether these remedial agents, radium and *x* rays, are used as widely as they should be and with similar results in England." It is difficult to believe that so distinguished a school of gynaecology as the English can be lagging behind the Continent in the matter of radium treatment, and Sir George Newman suggests that the absence of records may be due to a disinclination of surgeons and radiologists to publish accounts of series of cases, to an absence or incompleteness of clinical records, and to a lack of any system of ascertaining after-histories. If the results in this country are at all comparable with those obtained on the Continent it is to be regretted that they are not put on record; on the other hand, if the claims made for radium treatment are untenable it is still more important that the fact should be made known.

In discussing the various methods of treatment in cases of carcinoma of the cervix, Dr. Lane-Claypon states that it is only necessary at the present day to consider the relative merits of two—namely, abdominal hysterectomy and radiation—and the first part of her report is concerned with a comparison of these two methods. In order to simplify the inquiry, no consideration is given, in the first instance, to the stage of the disease at the time of operation; the cases are merely classified into operable and inoperable, differences indicated by such terms as "borderland," "early," and "advanced" being excluded. In order to compare the two methods on this basis it is necessary to take out four sets of data: (1) the total number of applicants; (2) the operability, that is the number of patients reckoned operable out of the total number of applicants; (3) the immediate operative mortality; and (4) the number of survivors at five years after treatment, having regard to the total number of applicants as well as to the total number treated. With regard to the rate of operability, several circumstances combine to render this a fluctuating figure. Thus there was an almost universal increase in the number of inoperable patients during the period of the war, which has not yet everywhere disappeared. Again, the personal opinion of the individual surgeon as to what cases should be considered operable must be a very considerable factor. Also a great increase in inoperable cases was noted in many clinics after the introduction of radium treatment in 1913, women being apparently more willing to come forward in view of the alternative to surgical treatment, and surgeons probably now regarding some advanced cases as inoperable which, in the absence of radium, would have been recommended for operation. As to the method of obtaining the operability figure, it was found impossible to discriminate between the standard of operability adopted by different surgeons; their figures have been accepted and a mean operability calculated on the basis of the massed figures. Even so it was found that the mean operability could not be calculated for all authors, since many fail to state the number of inoperable cases in their practice, and, where the figures are given, it is by no means certain that they afford the total number of women making application. The mean operability thus calculated was found to be, in the case of abdominal hysterectomy, 48.9 per cent., and in the case of radiation, 40.8 per cent., the lower percentage in the case of radiation being due probably to the increase already mentioned of inoperable applicants following the introduction of radium. With regard to the operative mortality, no difficulty was found in estimating the percentage; large samples were available; the percentage for abdominal hysterectomy was 17.3, that for radium *nil*. Although deaths have undoubtedly occurred after radiation they have been few, and have occurred chiefly at a time when the dangers of radiation were not appreciated. With regard to the survival rates, it is important that these should be calculated on the total number of applicants, both operable and inoperable, since a surgeon might readily produce a high percentage of survivals by the simple process of declining to operate on the more advanced cases. It would have seemed necessary also to have taken into account those patients whose fate could not be ascertained, and those known to have died within the five-year period from some cause other than cancer. It appears that these cases can safely be left out of consideration, since it has been recently shown in this country that the

[1] Ministry of Health Report, No. 40. H.M. Stationery Office. 1927. Price 5s. 6d.

untraced cases form a reasonably fair sample of the whole. Finally, with regard to the total number of applicants, it was mentioned above that some authors fail to record the totals in their practice; where this is the case the assumption has to be made that the total number bears a definite relation to the number of cases operated on, taking the standard mean operability rate into consideration. The results of this part of the investigation are set out in the following table.

	Abdominal hysterectomy.	Radiation.
Operability	48.9	40.8
Operative mortality	17.3	—
Survival rates:		
Total cases	18.3	22.0
Inoperable cases excluded ...	37.6	35.8

Thus if the inoperable cases are included radiology gives the better results, but if they are excluded then operative surgery shows a slight preponderance of survivors. Radiation has the further advantage that in inoperable cases it can show a survival rate of 12.7 per cent.

In view of the very wide divergencies in the survival rates shown by individual surgeons, Dr. Lane-Claypon has endeavoured to obtain more definite indications of the relative value of the two methods by taking out figures of authors who had published results of not less than one hundred consecutive cases treated exclusively by one or other method. In these selected series there still appeared such wide divergencies that no general deductions have been found possible. The remainder of the report deals with the results of treatment in relation to the stage of the disease at the time of treatment, with questions as to the influence of age and civil state, of the symptoms and their alleged duration, of the infection of the glands, and of the dissemination of the disease in the body; a final section is devoted to cancer of the body of the uterus.

MATERNAL MORTALITY AND MORBIDITY IN VICTORIA.

Australia, like the mother-country and the other Dominions, has been exercised about her puerperal mortality, and in the State of Victoria the report of a committee appointed by the Victorian Branch of the British Medical Association in 1924 to consider the matter had important consequences. Among them was a gift of £10,000 to the University of Melbourne for the appointment of a director of obstetrical research, whose duty was to inquire into the causes of maternal mortality and disability in Victoria and to suggest means to prevent or lessen both.

An interim report by the director, Dr. R. Marshall Allan,[1] presents many points of interest, particularly in that he has made a survey of domestic obstetric practice as well as of the work of hospitals and other institutions, public and private. All practitioners in the State were circularized and personal interviews obtained with 230 of them, both in Melbourne and throughout the country districts. The part of the report dealing with the director's observations on midwifery in private practice appears to be as applicable here as in the Antipodes, and is certainly worthy of detailed study.

The author takes a decidedly optimistic view of the improvement in midwifery practice in Victoria, and is not inclined to accept the statement in Dame Janet Campbell's report on maternal mortality,[2] that while the general death rate has been reduced by a third, and the infant mortality halved, since the beginning of the century, the maternal mortality has been little affected. He gives figures for his own State to show that there has been a decrease of 22 per cent. in the general death rate and 31.5 per cent. in infantile mortality as compared with one of 23 per cent. for all puerperal causes. Of the latter, sepsis decreased by 38 per cent. and the rate for other causes by 17 per cent. It is to be noted, however, that the statistics on which those findings are based are not of five-year periods, but of two selected years, 1905 and 1925. In contrast to Dame Janet Campbell's report, the investigation into the results obtained in domestic practice allows of the inclusion of the records of successful work, although the manner in which they are stated leaves their precise meaning uncertain.

In one series, quite unselected, of sixteen men who had delivered between one thousand and two thousand women, the average mortality was two. Another group of fifteen doctors who had delivered more than two thousand women had only lost an average of three patients.

In regard to ante-natal supervision attention is drawn to the handicap caused by the custom of many expectant mothers to engage their nurse early in pregnancy and not to visit the doctor till near the end or until labour begins. Dr. Allan states also that there is little trouble in keeping in touch with women in their first pregnancy, whereas the multiparae tend to be irregular in attendance. His conclusion is that, save in some of the industrial areas, ante-natal supervision is good and that the public is being rapidly educated to its value.

Of the confinements 60 per cent. take place in hospitals public or private, the proportion varying with the locality and the reputation of its hospitals. The report is emphatic on the need for the establishment of large modern maternity units with accommodation at reasonable rates, as by their establishment "much of the drudgery of obstetrics and the temptation to force the natural sequence of events would be avoided."

Regarding the vexed question of forceps delivery the actual words of the report may be quoted:

"The number of patients requiring the application of forceps varies from 10 per cent. to 80 per cent. with individual men. Those who employ them as a routine are invariably busy practitioners and confess that it is due to pressure of work. Routine application is defended on two grounds: (1) The saving of the perineum; (2) the absence of any bad after-effects. On the other hand, many men are not so optimistic about the prevention of lacerations with the forceps. While no records have been given in support of these views, the figures of St. George's Hospital, Kew, in a district where the collective skill of the practitioners is certainly not below the average, are instructive. Forceps were applied in the case of 19 per cent. of the women and the percentage requiring suture was as great as with those following natural delivery. The total morbidity of all patients was 7 per cent., while that of those who had forceps delivery was 10.5 per cent."

The remarks on operations for contracted pelvis and Caesarean section are interesting. The report acknowledges that the family practitioner is not usually able to give any details as to the degree of pelvic contraction, and then goes on to say, "it is difficult to understand why some men have a monopoly of cases, whilst colleagues equally busy in the same suburb hardly ever see one."

Surely there is no difficulty in understanding this apparent anomaly? In protracted labours several factors are very often present—a trifling degree of contraction, relative weakness of the forces, a large or unduly hard head with perhaps some degree of extension, or a persistent posterior position. No two observers may agree as to the prominent factor, but to many the simple mechanical explanation of pelvic contraction is the easiest and simplest, and is accepted as the cause of delay. Thus, in a country where rickets and contracted pelves are rarities, a monopoly in contracted pelves may be readily acquired by the simple process of ascribing all difficult and delayed labour to pelvic deformity. The remarks on treatment are also worth quoting:

"Too few are given a trial of labour, and it would be better if operation were deferred until reputable consultants had concurred as to its necessity. I have collected the records of one hundred and thirty-two Caesarean sections with a maternal mortality of 10 per cent. for all indications. The majority were performed for contracted pelvis, placenta praevia, and toxaemia. The mortality following this method of treating eclampsia and placenta praevia does not compare favourably with that following more conservative methods."

The director considers that the public needs much more education regarding the dangers and sequelae of injudicious interference in labour; also that the profession must combine to raise the dignity of the obstetrical art, especially by limiting the amount of midwifery which can be undertaken in a given period.

The amount of puerperal sepsis in private practice was

[1] Interim Report on Maternal Mortality and Morbidity in Victoria. By R. Marshall Allan, *M.C.*, M.D., F.R.C.S.Ed., Director of Obstetrical Research, University of Melbourne. Reprinted from the *Medical Journal of Australia*, January 1st, 1927.

[2] *Ministry of Health Reports*, No. 25.

found difficult to estimate owing to lack of records, but, in the majority of cases, is stated to have followed some operative intervention. The nurse was blamed only in a small proportion of cases, but the general opinion among the practitioners was that most of the infections occurred in the smaller type of hospital and not in private houses.

In summarizing the results of his inquiries, Dr. Allan expresses the view that the high ideals set before students by their teachers are beginning to show results, and that he is able to see this improvement more clearly than others because he has been in a position to view it apart from the daily worries of practice. On the other hand, he utters a warning to the effect that the first result of an awakened professional conscience will be a rise in the statistical rate due to a more accurate certification of the cause of death; at present there is a disposition to take shelter behind a fictitiously low mortality rate.

Clinical and laboratory investigations are being conducted at various maternity institutions, and accounts of them will be presented in the final report next year.

Nova et Vetera.

HANGED, DRAWN, AND QUARTERED.

THERE is a good deal of grim interest in the forms of punishment that are now obsolete in this country. The pillory, the ducking-stool, the brank or scold's bridle, the whipping-post, and stocks are well known forms of punishment that are no longer in use. Among the rarer forms may be mentioned the *peine fort et dure*, or pressing to death, burning to death, and boiling to death. This latter was not allowed by the common law, but in order to deal more effectually with the crime of wilful poisoning a new statute was passed in the twenty-second year of Henry VIII, which made high treason punishable by this grievous and lingering death, without benefit of clergy.

The full punishment in the execution of traitors, although not absolutely done away with until the year 1870, cannot frequently have been inflicted for the last two hundred years. From the thirteenth to the fifteenth century this sentence was often carried out at many of the principal cities and towns of the kingdom. In every case of high treason, save in the crime of coining, the sentence was that the offender be led to the gaol from whence he came, and from thence be drawn to the gallows and there hanged by the neck; that being alive, he be then cut down and his entrails taken out and burned; that his head be cut off and his body divided into four quarters, the head and quarters to be at the disposal of the Crown.

In the *Chronicque de la Traïson et Mort de Richart Deux Roy d'Engleterre*, translated by Benjamin Williams, F.S.A. (English Historical Society, 1846), is given the following account of this ghastly business in the case of certain of King Richard's adherents.

"The King (Henry the Fourth) commanded his chamberlain, Sir Thomas Erpingham, to have justice executed upon the lords who were taken prisoners, and to put them all to death, except a young knight whom he had dubbed the Saturday before his coronation, whom the King pardoned for rising in arms against him, on account of his youth and noble lineage. Sir Thomas Blount and Sir Benet (Shelley) were drawn from Oxford unto the place of execution, a long league or more, and there they were hung; they then cut them down and made them speak, and placed them before a large fire. Then came the executioner with a razor in his hand, and kneeling down before Sir Thomas Blount, who had his hands tied, begged his foregiveness for putting him to death, for he was obliged to perform his office. 'Are you he,' said Sir Thomas, 'who will deliver me from this world?' The executioner replied, 'Yes, my lord; I beg you to pardon me.' The lord then kissed him and forgave him. The executioner had with him a small basin and a razor, and kneeling between the fire and the lords, unbuttoned Sir Thomas Blount, and ripped open his stomach and tied the bowels with a piece of whipcord that the breath of the heart might not escape, and cast the bowels into the fire. As Sir Thomas was thus seated before the fire, his bowels burning before him, Sir Thomas Erpingham said, 'Now go and seek a master who will cure you.' Sir Thomas Blount placed his hands together, saying, 'Te Deum laudamus! Blessed be the hour when I was born, and blessed be this day, for I die this day in the service of my sovereign lord King Richard.' After he had thus spoken, Sir Thomas Erpingham asked him, 'Who are the lords, knights, and esquires who are of your accord and treason?' To which the good knight replied, suffering as he was, 'Art thou the traitor Erpingham? Thou art more false than I am or ever was; and thou liest, false knight as thou art; for, by the death which I must suffer, I never spake ill of any knight, lord, or esquire, nor of anybody in the world; but thou utteredst thy false spleen like a false and disloyal traitor; for by thee, and by the false traitor the Earl of Rutland, the noble knighthood of England is destroyed. Cursed be the hour when thou and he were born! I pray to God to pardon my sins: and thou traitor Rutland, and thou false Erpingham, I call you both to answer before the face of Jesus Christ for the great treason that you two have committed against our sovereign lord noble King Richard, and against his noble knighthood.' The executioner then asked him if he would drink. 'No,' he replied, 'you have taken away wherein to put it, thank God'! and then he begged the executioner to deliver him from this world, for it did him harm to see the traitors. The executioner kneeled down, and, Sir Thomas having kissed him, the executioner cut off his head and quartered him; and he did the same to the other lords, and parboiled the quarters. And in Oxford castle many other knights and esquires were beheaded."

Without wishing to be facetious over this grim affair, one may wonder at the refinement of cruelty of asking a man to have a drink in such circumstances, and at the fortitude of Sir Thomas Blount, as shown in his answer.

From a medical point of view the chief interest in these cases is the fact that a man on whom this barbarous sentence had been inflicted was yet able to retain consciousness and to answer questions. I assume that the executioner cannot have made a very large incision with his razor. If he had ripped up the abdominal wall and removed the mass of the intestines, the shock, I should think, must have been such as to make the patient unconscious at once. I assume that he can have made only a small incision, through which a knuckle or two of gut may have protruded, with a piece of the great omentum; this prolapse must have been tied and cut off; if he had cleared the abdominal cavity of only the gut the shock would have been so great as to lead to instant death; at least that is how it strikes me; perhaps some surgeon can enlighten me.

In Sir Thomas Blount's speech to the chamberlain, it might be thought that what he intended to say was "thou are the traitor, Erpingham." The query is inserted here because it is in the text; and on looking up the original French on page 91 I find: "*Es tu le traitre Arpeghem tu es plus faulx*," etc.

R. R. JAMES.

New Zealand.

[FROM OUR CORRESPONDENT.]

DURATION OF LIFE.

AT the meeting of the American Public Health Association Professor Irving Fisher of Yale University expressed the opinion that increases in length of life are being attained at an amazing rate. He believes that the average length of life in 1930 will be 61; in 1940, 65; in 1950, 69; in 1960, 72. Whereas in America the expectation of life is at present 58 years, in New Zealand female lives have already reached an expectation of 65 years. The male expectation of life in New Zealand is 62¾ years, and these islands appear to enjoy the longest expectation of life of any country in the world.

SCHOOL DENTAL CLINICS.

Since 1921 school dental nurses have undergone a limited but intensive training for work in dental clinics to cope with widespread dental caries in the children attending the State primary schools in New Zealand. The scheme has been approved by the New Zealand Dental Association, the members of which are frankly unable to touch more than the fringe of this work, which is felt to be of high national importance from the public health point of view. Experienced dentists now speak of very obvious improvement in the condition of the teeth of school children. In the year 1926 the dental nurses undertook 50,375 fillings,

33,387 extractions, and performed 43,492 minor operations. At the present time fifty-eight clinics are established, and 33,000 children are receiving regular dental attention. It is not only in actual treatment that good work is accomplished. The pamphlets distributed to each child on diet and oral prophylaxis are commendable, and have an educative effect upon the parents. Many parents are inclined to be careless, and others cannot afford the expense of having their children's teeth regularly attended to. A nice point is the extent of skilled work that should be executed by dental nurses with their relatively limited training; but that a proper limit is set is in evidence in the fact that the president of the New Zealand Dental Association advocates the extension of the scheme to all State primary schools. This extension would necessitate increasing the staff, and presumably also the expense, sixfold. The aim at present is to treat all the children who require treatment to the age of 9 years, and as far as possible to follow up this treatment to the end of the child's school career. The department cannot with its present staff instruct more than forty dental nurse pupils, and the period of training extends over two years. Claims have been made on behalf of private schools for the services of the school dental nurses, but the Minister of Health considers that the children in the State schools have first claim, and cannot at present see his way clear to incur the further expenditure necessary to overtake the dental work required for the full total of 200,000 children attending the State primary schools in New Zealand.

During the war period it was found that the extent of dental decay in recruits was amazingly great, and this was an important factor in the attempt to lessen the evil by beginning with young children in the schools. There is evidence that the education of parents in the need for regular dental attention to children is extending, but progress in this direction is slow. Probably benefits which are easily and cheaply attained, or which cost nothing, in public health matters as well as in education, are not sufficiently highly valued, but whatever may be said by way of adverse criticism there is no doubt that investigation revealed in New Zealand a deplorably bad state of dental sepsis in children which the dental profession was unable to treat adequately, and the system of dental clinics staffed by school dental nurses has been a pronounced success.

England and Wales.

X-RAY SERVICE IN LONDON MENTAL HOSPITALS.

FOLLOWING a suggestion made by the Board of Control that valuable aid to diagnosis would be forthcoming if x-ray apparatus were available for each of the London mental hospitals, the mental hospitals committee of the London County Council is considering as to the best method of securing an efficient x-ray service. In the meantime, tentative arrangements have been made for obtaining radiographs as required, and as an experiment it is proposed to engage a consultant radiologist for one year to read and advise on radiographs in difficult cases. The fee suggested is one guinea (inclusive) for each case reported upon by him.

Tuberculosis: After-Histories.

A report was furnished to the London County Council at its last meeting on the after-histories of persons who, approximately five years ago, were discharged after residential treatment under the council's tuberculosis scheme. The patients, as in previous reports of the same kind, are divided into several categories: A, cases in which tubercle bacilli were not found in the sputum; B, cases in which the sputum contained tubercle bacilli; these were divided into three groups, according to the severity of the disease—namely, B1, cases with slight constitutional disturbance, if any, and obvious signs of very limited extent; B3, cases with profound disturbance or constitutional deterioration, and all cases with grave complications; and B2, cases not falling into groups 1 and 3. Thus cases described as A and B1 may be regarded as early, B2 as moderately advanced, and B3 as far advanced. During 1921 the number of adults discharged after treatment was 4,094, of whom 2,746 were civilians and 1,348 ex-service men. In 348 cases the diagnosis of tuberculosis was not confirmed; of the remainder (3,746) 350 were not traceable, and 218 were discharged from observation hospitals within a few weeks of treatment and were not transferred to sanatoriums. The number of cases investigated, therefore, five years after discharge was 3,178, including 223 surgical cases. The records showed the following results five years afterwards:

Class.	Total.	Alive 5 years after discharge.	Dead.
A	468	83.5%	16.5%
B1	330	61.5%	38.5%
B2	1,299	34.0%	66.0%
B3	858	3.7%	96.3%
Surgical ...	223	73.5%	26.5%

Particulars obtained as to the fitness for work of the 1,230 surviving patients who were discharged from treatment in 1921 show that out of a total of 594 A and B1 cases, 68 per cent. were at work, which was considered satisfactory testimony to the value of sanatorium treatment when applied to cases in the early stage of the disease. The proportions at work in the other categories were: B2, 40 per cent., B3, 25 per cent., and surgical, 71 per cent. Of the total number of 1,230 in all categories 57.5 per cent. were at work, 4.4 per cent. were fit for work but were unemployed, and 37.5 per cent. were unable to work (including cases receiving further treatment); the condition of the remaining 0.6 per cent. was not known.

Proposed Segregation of Mental Defectives.

The London County Council at its meeting on July 26th had before it a resolution from the Leicestershire County Council to the effect that the segregation of mentally defective persons, unless accompanied by active measures for the prevention of the propagation of the mentally unfit, was likely to impose an unfair and continually increasing financial burden upon the public, and that legislation should be promoted in order to make illegal the marriage of any certified mentally defective person and to legalize a system of voluntary sterilization, with subsequent supervision of mentally defective persons. A similar resolution was also received from the Southampton County Council. The London County Council was not prepared to agree that surgical sterilization should be adopted as a prophylactic for mental deficiency, but passed a resolution that legislation should be promoted by the Government to make illegal the marriage of a person who was, for the time being, subject to an order of detention under the Mental Deficiency Act. On the other parts of the resolutions from Leicestershire and Southampton it was decided to take no action.

HEALTH OF LONDON IN 1926.

Volume III of the annual report of the London County Council for 1926 consists of the report of Dr. Menzies as county medical officer, and his report as school medical officer, together with chapters on public health, main drainage, and housing.

General Statistics.

The total population of the County of London in the middle of 1926, according to the Registrar-General's estimate, was 4,615,400, including 10,000 non-civilians, being an increase of 91,400 since last census, five years ago. As the excess of births over deaths during the period was 165,500 there has been a loss by excess of emigration over immigration of about 74,000 persons. The marriage rate for 1926 was 17.2 per 1,000, the same as in the previous year. The birth rate was 17.1, as against 17.9 in 1925, and 18.6 in 1924. It is suggested that the decline in the general birth rate of the country began with the Factory and Education Acts, which lowered the value of children as wage earners, and continued owing to the fall in the marriage rate due to the delayed wage earning power of youths compulsorily educated. Since 1910, despite the revival of the marriage rate among woman minors, the fall in the birth rate has been accelerating. The deaths in

London in 1926 were 53,476, being 1,485 more than in 1923, which had the lowest record. The excess is due to circulatory disease and cancer at higher ages, measles in children under 5, and vehicular traffic.

Infectious Diseases.

Five cases of small-pox occurred during the year. Two separate channels of invasion were traced, both originating from Paris. There was one death, that of a woman who had not been vaccinated since infancy. The notified cases of diphtheria numbered 13,526 and the deaths 547. Of 302 notifications of typhoid fever with 31 deaths, 5 were ascribed to fried fish. Of 7 cases of anthrax 5 were infected by foreign hides and 1 by feathers from China. One case died, an infant in Paddington, the source of infection remaining obscure. There were 83 cases of poliomyelitis; 8 of these, and 2 unnotified cases died. Of 173 cases of encephalitis lethargica 68, together with 22 unnotified cases, died. Between 1919 and 1925 there were 1,325 cases, of whom 495 died. An analysis of the survivors reveals that 373 are now apparently well, 61 have slight sequelae, 100 have incommoding sequelae, 180 are wholly incapacitated, and 116 are untraced. Though the 100 chronic encephalitis beds at Winchmore Hill fall short of native requirements extra-metropolitan authorities are asking for the treatment of persons resident outside London.

Tuberculosis.

Deaths from tuberculosis during the year were 4,066, giving an annual death rate of 0.88 per 1,000, and for other forms 691, corresponding to a death rate of 0.15 per 1,000. The view is expressed that in comparing the incidence of phthisis in different populations more attention should be paid to the death rate in each from all causes. Three groups of metropolitan boroughs representing three different social grades are shown to differ widely in their phthisis death rate, yet the relative incidence of phthisis, expressed as a percentage of deaths from all causes, is much alike in all. This contention is discussed also in its relation to Dr. Brownlee's three types of phthisis.

Cancer.

The deaths from cancer in 1926 were 6,920, equal to a death rate of 1.46 per 1,000, which is greater than that of 1925. Much of the increase in the cancer death rates since the beginning of this century merely reflects an altered age-constitution of the population of London. When allowance is made for this alteration it appears that the number of deaths among females has decreased, while the deaths among males have increased but slightly.

Under the heading administration reference is made to the tuberculosis scheme of the council. An investigation of the after-histories of 1,510 adult patients treated in residential institutions in 1922 reveals that 48.6 per cent. are now at work, 5.6 per cent. fit for work but unemployed, 43.7 per cent. unable to work, and 2.1 per cent. unknown. In April, 1925, a scheme was put into operation for removing children from overcrowded homes containing a case of advanced phthisis. Up to the end of 1926 688 applications had been received and 324 children boarded out. There is now no waiting list for residential treatment either for pulmonary or surgical cases in children. The extensive work of the council's chemical and bacteriological laboratories is reviewed. From observations made on visibility and actinicity there is no doubt that the smoke of London is an important and aggravating factor in screening off actinic light and in intensifying seasonal obscuration.

(To be continued.)

Ham Green Hospital, Bristol.

In Bristol, in the fourteenth century, there were three leper hospitals, and when leprosy became extinct no special hospital provision was made for infectious diseases for some centuries. In 1686 the guardians of the poor must have provided some accommodation for epidemic sickness, since Dover describes how, when spotted fever raged in Bristol, he visited from twenty to thirty patients a day, besides their poor children taken into the workhouse. During the cholera of 1849, and the typhus of 1865, the guardians provided isolation accommodation, a duty which they shared with the sanitary authority in 1886. The sanitary authority's share was at first two temporary wooden buildings in St. Philip's Marsh; then in 1892 a hospital was established at Novers Hill, primarily for small-pox. But soon after, in 1894, a fine Georgian mansion, called Ham Green, with estate of ninety-nine acres, situated on the Somerset bank of the Avon near its mouth, was purchased by the Bristol city council, and on this estate a modern isolation hospital containing seventy-six beds was built and opened in 1899. The estate was enlarged to 92 acres in 1919 and 136 acres in 1920. The latter purchase included a farmhouse with outbuildings, and the total estate now covers 327 acres. The farm supplies the hospital with milk, butter, eggs, a considerable amount of meat, and all vegetables. There are fine fruit gardens, and a lake on the estate supplies water for domestic uses other than cooking and drinking. The original seventy-six beds have been increased from time to time; fifty-eight beds were added in 1904, with space allowed for 200 fever beds in emergency. There are fifty-two beds for advanced cases of tuberculosis, but in recent years, on one or two occasions, these beds have had to be commandeered for diphtheria and scarlet fever epidemics. The need for extension of "fever" accommodation was thus evident, and the Ministry of Health approved of the plans for fifty-six additional beds. The opening of the newest extensions was described in our issue of June 25th (p. 1160).

The original hospital consists of four ward pavilions and two isolation pavilions, providing seventy-six beds, together with administration building, laundry, electric light station, and lodge. In 1894 four more pavilions, accommodating sixty extra patients, were added, the administration building was extended, the discharge block was built, and also a water tower. The latest extensions include a two-story pavilion, containing fifty-six beds, a new administration building for twenty-four additional staff, and kitchens with offices. The new ward pavilion consists of a main entrance with vestibule and central hall, out of which the male ward (ten beds) opens on the east side and the female ward (fourteen beds) on the west side. There is a south wing containing four single-bed isolation wards on the ground floor, each opening on to a covered verandah, which extends along the west side of the south wing. At the end of each wing is a sanitary block. On the south side of the east and west wings are covered verandahs, twelve feet wide, communicating with the wards, so that all the patients' beds can easily be moved on to the verandahs if the weather is suitable. In the centre of the building is the nurses' duty room, so situated that complete observation is obtained over all the wards.

The new wards present several novel features compared with the older building. They are built asymmetrically. There are four more beds on the female than on the male side, as it is found that the admission of females is always in excess of males. The isolation block is attached to the main ward and will be nursed by the same nurses, the duty room being so arranged as to enable the main and isolation wards to be under observation through inspection windows by the provision of glass partitions between each isolation cubicle. The cubicles are intended for the nursing of doubtful cases, or cases where the patient may be suffering from two diseases simultaneously. It used to be thought necessary to nurse such cases in a separate block with a separate staff, but it is now believed that infectious diseases (with the possible exception of small-pox) cannot be air-borne except through about half a dozen feet. In fact, if a second disease is introduced by accident into a ward of patients, it will not spread if free ventilation is practised by open windows, in addition to elaborate precautions to prevent the carriage of infection on the hands of attendants. The new buildings are constructed of red brick with Bath stone dressings. The designs were prepared in the office of the city engineer and the construction was carried out under the personal supervision of Mr. H. W. Harding, L.R.I.B.A., architect.

Ham Green Hospital has an additional interest in that the nursing staff has been for some years most satisfactorily protected from diphtheria by means of Schick's preventive inoculation. Prior to the introduction of this method in

1922, 20 per cent. of the new staff were attacked by diphtheria; no case has occurred among the staff for over a year. This is a result of which Dr. D. S. Davies (medical officer of health for Bristol) and Dr. B. A. I. Peters (resident medical officer) may well be proud.

MENTAL RESEARCH.

The annual report of the Laboratory of the Joint Board of Research for Mental Disease at Birmingham for the year ending March, 1927, is prefaced by a tribute to the late Sir Frederick Mott, its honorary director, who passed away last July in the Birmingham General Hospital as a result of a cerebral thrombosis which occurred during a train journey from London to Birmingham. Sir Frederick Mott, the report recalls, accepted the directorship of the board following its inauguration in 1922, and devoted his energies to the establishment of a research laboratory at Birmingham in connexion with the Rubery and Hollymoor Mental Hospitals, on lines similar to those at the Maudsley Hospital in London. Work carried on under his direction included the determination of iodine in thyroid glands and the correlation of mental and physical conditions. A new method of determining the basal metabolism of patients by means of a chamber was devised and the apparatus was installed at Hollymoor. Other investigations begun were into the individual reaction of patients to certain problems connected with subacute and chronic infections; into the relation of the enteric group to the immunological processes as having a possible bearing upon endocrine activity; and into chronic sepsis in its association with focal lesions elsewhere, with possible toxic effects upon the nervous system. Work was carried on under his direction in the wards of the hospital, especially with regard to the treatment of general paralytics by tryparsamide; the results were assisted by laboratory examination of the body fluids. He gave up much of his time to the teaching of the medical officers of the institutions, all of whom obtained the diploma of psychological medicine; he was also lecturer in morbid psychology at the University of Birmingham in 1923-24-25, and was about to continue in 1926. The great loss to the world of such a widely experienced neurologist, especially in the field of research in mental disease, could not be estimated. The laboratory director, Dr. F. A. Pickworth, was appointed to the directorship of the board last October, and the work subsequently carried on has been planned for some time to continue on the lines initiated by Sir Frederick Mott. The work on basal metabolism has necessitated the investigation of the basal rate of normal subjects, and the results have been collected in a paper presented to the Royal Society by Professor Haldane, and published in its *Proceedings*. Serological agglutinations to the typhoid-dysentery group of organisms have been made as a routine on every patient in the hospital, and serological agglutination curves of animals have been determined following treatment to elucidate the atypical agglutination reaction of the patients. Material from chronic septic foci has been investigated for the type of organism and the histological appearances of the tissue. Many patients have been examined for the alteration of the permeability of the brain membranes. The *post-mortem* appearances of the nasal sinuses have been carefully studied and further cases of nasal sinus disease discovered. One case showed a long-standing perforation of the sphenoid sinus into the pituitary fossa. The pituitary was surrounded by a mucinous septic fluid, and there was evidence of considerable extension subdurally of this septic process.

Scotland.

THE PINEL CENTENARY IN EDINBURGH.

In commemoration of the centenary of the death of Philippe Pinel, a laurel wreath was placed, on July 22nd, on his bust, which is built into the archway of the Royal Edinburgh Mental Hospital at Morningside. Sir H. Arthur Rose, chairman of the General Board of Control for Scotland, who presided at the ceremony, referred to the magnitude of the change in psychiatry which could be traced back to the labours of Pinel in France. Dr. H. Calin of Paris, commenting on the historical friendship between Scotland and France, said that, though Pinel had died in 1826, the statue to his memory in Paris was only erected in 1885, while the bust in Edinburgh had been placed in position as early as 1838. Dr. Hamilton Marr, president of the British Psychological Society, and one of the vice-presidents of the Section of Mental Diseases at the Annual Meeting of the British Medical Association at Edinburgh, compared the aspirations and achievements of Pinel with those of Lister.

EDINBURGH DENTAL HOSPITAL.

The new buildings of the Incorporated Dental Hospital and School were opened on July 13th by the Right Hon. Sir Francis Dyke Acland, chairman of the Dental Board of the United Kingdom. Dr. William Guy, F.R.C.S., dean of the school, presided. In declaring the buildings open, Sir Francis Acland said that the work of the Dental Board fell under two chief headings. The first was to impress the importance of dental health as a basis of general health and of national efficiency, and the second to take care that the means for securing dental health were as good as it was possible to make them. The Board was using the annual fees paid by the dentists admitted to the *Dentists Register* since the passing of the 1921 Act in order to give to others a better training; he believed that more dentists would have to be trained as the enormous importance of dental health became better appreciated. The reputation of the Edinburgh Dental School showed that the scientific and practical aspects of dental education were combined in it in an unusually thorough way. Only in those districts where, in addition to a fresh supply of competent dentists, the needs of the dental hospital were fully met, could the claim be substantiated that the dental needs of the people were properly provided for. Among such districts he hoped that Edinburgh might always take a prominent place. After declaring the buildings open, Sir Francis Acland presented the prizes for the session. The new buildings, which have a handsome frontage in alignment with the other buildings in Chambers Street, stand in front of the old Dental Hospital, which has not been demolished. The present extension has cost £17,000, and has been carried out with the help of the Dental Board, which contributed £5,000 towards the new buildings and £1,000 towards their equipment. A dinner to commemorate the official opening of the new buildings was held the same evening, and Dr. William Guy, who presided, remarked that he had seen the Edinburgh Dental School grow from the time when it occupied a single room at No. 30, Chambers Street. From this it had migrated to Lauriston Lane, and occupied a saloon; next it returned to 31, Chambers Street, where the Dental School shared a building with the Eye Dispensary; now it had a school in the city of Edinburgh, in which the facilities were fully adequate to the complete instruction and education of a very large number of dental students; he believed that the men who obtained there the licentiateship of the Royal College of Surgeons need not fear comparison with men who had received their education anywhere else.

CHEMISTRY IN THE PROGRESS OF MEDICINE.

The Society of Chemical Industry held its forty-sixth annual meeting in Edinburgh last month. It was attended by about 250 delegates, who were received by Lord Provost Stevenson on behalf of the city, and by Professor Sir Thomas Hudson Beare, dean of the faculty of science, on behalf of the university. The dean remarked that in 1912 it had been decided to house the chemical department of the university in a new building. Although this project had been delayed by the war, the university had now embarked on an expenditure of about a quarter of a million sterling for this purpose. The debt for the building of the great chemical laboratory at West Mains had been practically extinguished already. The question of degrees in science had also been considered, and they had been reorganized under a new ordinance. At the meeting which followed Mr. Francis H. Carr, C.B.E., presided, and delivered an address entitled "Chemistry in the progress of medicine." Pure and applied chemistry were, he said,

equally necessary for progress in the field of chemical industry, and medicine was dependent upon chemistry in some important respects. One of the principles of medical treatment to-day was to help the body to produce its own curative agents. The effect of most of the medicines employed was not directly to cure, but to relieve symptoms and to secure rest, and thus enable the body to overcome disease. Among the older drugs some, such as cinchona and ipecacuanha, acted directly as curative agents, and the lecturer directed particular attention to these and to the numerous synthetic chemotherapeutic substances which now found a place in medical treatment. Enough was not yet known regarding the physiology of living processes to enable a reasoned plan to be framed on which to search for chemical agents that would restore the unhealthy body to its normal condition. The chemical constitution of adrenaline, thyroxine, and histamine had been ascertained, and these compounds could be prepared synthetically, but the methods of their release from the glands which contained them was not yet known, nor even whether they could exert their action without first being built into more complex molecules within the body. In spite of numerous investigations on the production of antibodies, when bacteria or foreign proteins were introduced into the body, nothing of their real chemical nature was known. The fact that a chemical substance would destroy micro-organisms in a test tube was no guarantee that it would be of use in combating infection by the same organism in the living body. It was evident that the best therapeutic agent was likely to be the one which most nearly imitated nature, and it now appeared probable that the body by no means played a passive part in the effects thus obtained, as suggested by phenomena seen in the case of the action of salvarsan. Dale had pointed out that certain parasites in the blood of a mouse became more resistant to arsenical drugs after the animal had received a number of incompletely effective doses, whereas if the organisms were then transferred to rats they again became susceptible. Other observers had shown that a period of time elapsed between the injection and the development of the maximum toxic action, associated probably with oxidation reduction processes in the cells. There was no reason to suppose that a dye produced any particular antiseptic effect because of its colour; many colourless substances would doubtless act as well, but the antiseptic property could not be so readily detected in them. Thus Bayer 205 and Fourneau 309—colourless complex urea derivatives allied to dyestuffs—had a remarkable therapeutic action in sleeping sickness. Although effective *in vivo*, they had little action on trypanosomes *in vitro*, thus indicating that the host participated in the destruction of the parasite. A property which effective chemotherapeutic agents should possess was that of long-continued action. Such effects had been demonstrated in the case of bismuth. More effective therapeutic agents had been discovered against protozoal than against bacterial diseases, for experimental work in the former had been easier and less reliance had been placed on experiments carried out purely *in vitro*. The fact that a suitable animal test might lead to the discovery of useful therapeutic substances was shown by "plasmoquin," a quinoline derivative allied to quinine and most effective in the destruction of the crescent forms of the malarial parasite. The test animal used in this particular instance was the canary, infected with the parasite of avian malaria. The lecturer believed that future advances in chemotherapy lay in the direction of biochemistry, and needed more effective contact between workers in chemistry, bacteriology, physiology, and clinical medicine; less reliance must be placed on experiments *in vitro*, and adequate animal tests must be followed by extensive clinical trials.

ANNUAL REPORT OF THE SCOTTISH BOARD OF HEALTH.*

Water Supply.

Under water supply it is satisfactory to observe that in terms of the last of a number of schemes entertained by the town council of Perth for the water supply of the city, as confirmed by Parliament last year, a chlorination plant for the River Tay water is to be installed to the satisfaction of a person approved by the Scottish Board of Health, while the engineer in charge and the bacteriologist retained by the council must likewise have the Board's approval. Examples of outlying towns or villages which, though wishful to improve their supplies, have been deterred by prohibitive costs, are also cited in this section.

Venereal Disease.

From a tabular analysis covering a five-year period it emerges that syphilis, soft chancre, and mixed infections in males are showing a steady decrease. New cases of gonorrhoea in males increased up to 1924-25, but have since declined. In women new cases of syphilis and soft chancre are diminishing in number, but gonorrhoea in 1925-26 showed a rise of 30 per cent., ascribed in part to the opening of four new treatment centres. The percentage of defaulters is slowly growing less. Edinburgh and Glasgow have each appointed a visiting nurse almoner to deal with these persons.

The Hospital Question.

Reference is made to the report of the Hospital Services (Scotland) Committee, submitted in January, 1926. The committee, under the chairmanship of Lord Mackenzie, made certain recommendations in an attempt to secure, by co-operation all round, and not least between the voluntary hospitals and the local authorities, a continuously adequate hospital service. Such co-operation the Scottish Board of Health has always sought to encourage, and arrangements in this spirit seem likely to fructify at Stirling and Falkirk, where it is in contemplation to include a maternity wing in the proposed re-erection on a new site of the two general hospitals concerned. The enlightened policy of the parish council of Glasgow, which has raised Stobhill to the rank of a first-grade hospital, placed its surplus beds at the disposal of the Glasgow Royal Maternity Hospital, and opened its doors to receive encephalitis lethargica from every part of Scotland, is another pertinent instance. The town council of Aberdeen, anticipating Poor Law reform, are entering into a contract with the parish council to take over the Poor Law hospital and treat all Poor Law patients. The Scottish voluntary hospitals, too, are consolidating their position. The Northern Infirmary at Inverness is to be reconstructed, and general infirmaries in Glasgow and Edinburgh are erecting auxiliary hospitals. These various enterprises are all to the good, but there is still a shortage of general hospital beds in Scotland, and a national organization on the lines recommended by the Mackenzie Committee remains a pressing need.

School Health Administration.

There were approximately 823,028 pupils in average enrolment in 3,458 State-aided schools in Scotland, in all of which there was systematic medical inspection. The total number of children in selected age groups examined during the year was 254,570. In addition, 209,574 special examinations were made. The total examinations were 464,144, an increase on last year.

The nutrition of 6.1 per cent. of the children examined was below average; of 1.3 per thousand very poor. Marked enlargement of tonsils and adenoids was noted in 4.9 per cent. At least 6.5 per cent. of the children in school have defective vision requiring glasses. Heart defects, organic or functional, were found in 1.4 per cent. Actual vermin were discovered on the heads of 2.16 per cent. The short hair now common should make it easier for parents to prevent infestation. The school medical officer of Roxburgh, however, suggests that since bobbed hair needs less attention it probably gets less. Mild infestation among girls in Roxburgh is increasing. Owing to the dispute in the coal-mining industry a fairly extensive scheme for the feeding of school children was adopted in most colliery areas.

Defective vision was treated in all districts. Renfrewshire education authority have introduced special classes for the blind of school age. Orthopaedic treatment is provided by a few authorities. In Glasgow two medical gymnasts are employed full time. Orthopaedic appliances were

* Continued from page 115.

supplied to 112 Glasgow children. Lanarkshire children received treatment at the Glasgow Royal Hospital for Sick Children and elsewhere.

The Insured Sick.

The district medical officers of the Board, who act as referees and consultants, have now been at work for over five years, and in that time 83,045 persons have passed through their hands. Three studies, based on this field of work, which are presented in the report, furnish material for estimating the medical significance of the system of national health insurance. The study of urban versus rural conditions as affecting the incidence and causation of incapacity reveals a higher proportion of lung tuberculosis in rural than in urban areas. In both areas rheumatism, rheumatoid arthritis, and cardio-vascular disease increase as incapacitating factors in each successive decade. The weight of anaemia, in the ages at which it occurs, appears as approximately equal in rural and urban areas. This equality is, however, fallacious, since 70 per cent. of the rural cases were domestic servants who had given up situations in towns on becoming chlorotic and had returned to their homes in the country in order to recuperate. The seasonal incidence of rheumatism and non-tuberculous pulmonary disease is not dissimilar in urban and rural areas during most of the year. From October onwards, however, both conditions show a fall in rural areas but a rise in the towns. The study of the work of the district medical officer in a consultant capacity exhibits the variety of the circumstances in which he can aid the insurance practitioner. His work is of most value in the rural areas, where the sense of medical loneliness is so often felt, especially in cases where improvement is slow and friends are apprehensive. A note on mitral disease following rheumatic fever is appended to this study. The third study is based on cases of bronchitis referred in 1925. The weight of bronchitis among all forms of illness referred was represented by 8 per cent. It is questioned whether bronchitis alone results in a permanent *nil* working capacity unless in a small minority of cases. Except during acute or subacute attacks such patients are usually capable of some form of employment. It is admitted, however, that the disease entails a lowered working value. Of 495 cases of bronchitis in the district 297 were in the heavy trades, of whom 199 were miners, 57 general labourers, 18 metal workers, and the remaining 23 distributed among the occupations of iron and brass founders, woodworkers, quarrymen, engineers, dock labourers, builders, blacksmiths, and brickmakers.

Other Subjects.

Among other subjects of interest are: influenza on St. Kilda; maternity service and child welfare; supervision of the food supply, including the Milk and Dairies (Scotland) Act, 1914, veterinary inspectors, dairy by-laws, Milk and Dairies (Scotland) Order, 1925, milk-borne infections, meat inspection, humane slaughter, and preservatives in food; the handling and storage of food; national health insurance in its manifold aspects, including dental and ophthalmic benefit, anaesthesia, mileage, and dispensing; Poor Law administration; old age pensions; and the welfare of the blind.

Conclusion.

The foregoing are some of the more outstanding features of an annual report which, while conveying appropriate information on the departmental side, has at the same time a strong medical interest. The *res medica* is by no means a new topic in the reports of the Scottish Board, but it seems as if in that for 1926 it had emerged into special prominence. This is great gain. There is in these days a good deal of talk on the subject of health propaganda, which has for its object to shepherd the masses along good ways of living. Any enterprise so directed is useful, and should be encouraged; but there is a not less important field of health propaganda, which is worthy of cultivation, among educated and well informed people whose views or convictions on medical questions would influence or guide the trend of opinion in the country. To the perusal and attentive study of such the Board's report is commended. It will show them how medical thought is moving, indicate the lines of administrative advance which are most vital at the present time, and will, if they are public-spirited citizens, whether medical or lay, enlist their cordial co-operation in accredited schemes for the promotion of the public health.

Ireland.

ELECTION OF DIRECT REPRESENTATIVES.

Medical Practitioners Act, 1927 (Irish Free State.)

Notice of election is issued for two direct representatives of the medical profession resident in the Irish Free State to be members of the Medical Registration Council. Any registered medical practitioner resident in the Free State is eligible to be nominated as a candidate, and every registered medical practitioner resident in the Free State is entitled to take part in nominating two candidates, but no more. Every nomination paper must state the names, address, and registered qualifications of the candidate nominated. It must be signed by not less than twelve registered medical practitioners resident in the Free State. Nomination papers may be obtained from the Returning Officer, Room 242, Department of Local Government and Public Health, Upper Merrion Street, Dublin. Votes cast by voting papers must be received by the Returning Officer not later than August 22nd, 1927.

Dr. R. J. Rowlette's Candidature.

Dr. R. J. Rowlette has consented to become a candidate as a direct representative of the medical practitioners in the Free State. He is one of the best known medical men in Ireland, and for the past twenty years has given very freely of his time in the interests of the profession. He has been selected on several occasions by the joint medical organizations to represent the interests of the profession on all commissions of a medical nature. Through his extensive knowledge of medical matters generally and a commanding personality, he has been responsible in recent reports published by commissions and committees for recommendations of outstanding importance with regard to public health matters and the profession. Dr. Rowlette has been an active member of the British Medical Association, and was some years ago president of the Leinster Branch. He is a member of the Irish Medical Committee and of the council of the Irish Medical Association. He was also a member of the Irish Public Health Council in 1919, and of the Committee of Inquiry on National Health Insurance on the Public Medical Services in 1924. Dr. Rowlette is assured of the support of all medico-political organizations in Ireland. It is hoped that medical practitioners, who will receive voting papers, will fill them up at once and forward them to the Returning Officer.

Correspondence.

THE INTERNATIONAL CONTROL OF DRUGS OF ADDICTION.

Sir,—In the Journal of July 16th (p. 107) an account is given of the attempt to secure the international limitation of morphine and other drugs of addiction to legitimate purposes. It is now generally recognized that the use of opium, either for eating or smoking, is responsible for relatively little harm, at any rate in the West. It is only after the chemist has extracted the alkaloid morphine that the European falls a victim to the vice.

Most European countries prepare morphine from opium, but under the international convention this is doled out only as it is required for the legitimate purposes of medicine or for export to other countries under strict supervision. Unfortunately this convention was so worded as to leave plenty of loopholes for the manufacturer to evade these restrictions; morphine derivatives which are not known to lead to addiction can be exported freely. As an example of my meaning I may say that it is known at the present time that certain Continental manufacturers are

exporting a new compound of morphine and benzene, a product which is not known to be a drug of addiction, and which, therefore, can be manufactured and exported like other non-addiction drugs. If this substance is treated with potassium carbonate the morphine is readily regenerated, and so it happens that morphine is easily transferred from country to country. No doubt the League, through its experts, will shortly be able to show that this substance can lead to addiction like morphine, and restrictions will be imposed, but a new substance will then doubtlessly be forthcoming to replace it. These facts point to the advisability—if this should be a practical policy—of controlling the growth of the opium poppy in Turkey, Persia, and other places—that is, of limiting the supply of material from which the alkaloid is manufactured.

The danger to Europe and America, however, does not lie even with morphine, but with the much more dreaded substance, the diacetyl derivative known as heroin. This substance acts with rapidity and does not constipate, or does so only to a negligible extent. It is the "perfect" narcotic for the social and sexual pervert. It is not perhaps properly recognized, even by medical men, that heroin acts also as a powerful aphrodisiac, exaggerating pelvic reflexes for several hours after injection or snuffing. It excites the male in this respect much as cocaine excites the female.

Many thoughtful people who have followed the trend of modern addiction are convinced that evidence shows that heroin addiction is spreading in spite of all preventive measures. They fear that it is likely to become, in Europe as a whole, as serious a menace to social life as it is in Russia and America. At present the evidence afforded by the committee of the Ministry of Health sitting under Sir Humphry Rolleston has made it clear that England is relatively free from this vice. Nevertheless the "neurotic" is believed to be an increasing product of our civilization, and it is especially these people who fall ready victims to heroin. The soil is ripe, but the opportunity, knowledge, and material are not easily available.

On the Continent I have been left with the impression that experts are gradually becoming convinced that prohibition of the manufacture of heroin is the best and perhaps the only method of destroying this evil, a principle which I believe has already been adopted in America. In England, where there is no immediate menace, physicians freely prescribe heroin, and some distinguished physicians assert that for certain purposes its usefulness cannot be replaced by either codeine or morphine. While I do not in any way wish to gainsay this teaching, it appears to me that the time is coming when we shall have to choose between two policies—either to encourage the manufacture of heroin by still prescribing it, or to range ourselves with the United States and some European countries and adopt the policy of complete prohibition of heroin in this country for any purpose.

The menace on the Continent is already very real, and the medical profession in this country may be required to make a decision, sooner or later, as to whether the safety of and benefit to the British Empire which may be attained from the complete prohibition of heroin may not be greater than the palliative relief afforded to a few patients, which some of us think may be obtained with codeine or morphine.—I am, etc.,

W. E. DIXON.

Pharmacological Laboratory, Cambridge.
July 25th.

THE PROPOSED NEW HOSPITAL POLICY.

SIR,—Mr. Hey Groves, in his address published in the JOURNAL of July 23rd (p. 131), advocates the support of the hospitals from the rates and taxes. I agree that it is doubtful if voluntary aid will be sufficient to meet the demand for hospital treatment much longer, as the voluntary hospitals are now having such a hard financial struggle. But, recognizing the fact that voluntary support comes from those best able to pay, and who rightly feel they ought to do so, I think we should be glad to postpone the substitution of State aid for it, as this would necessitate an increase of the income tax, which would levy contributions from those by no means wealthy, as well as the rich; and, I fear, if the hospitals were also supported out of the rates, from even the poorest classes, which I think would be most undesirable. Neither do I think any further demand should be made on this class, in the form of insurance, for the support of the hospitals.

It may be suggested that a compromise would be a wise policy—that the charitable public should give all they can and the deficit be made up by a State grant. But if the charitable public knew that the State would make up any deficiency would they give at all? Are they not likely to leave all support to the State? It seems to me that the hospitals must be supported wholly by charity or wholly by the State. I do not refer to occasional State grants to help hospitals in exceptional financial difficulty, but to permanent aid.

I cannot agree with Mr. Groves that the hospitals at present supported by voluntary contributions must be supported by the State in order that the standard of efficiency for treatment, teaching, and research may be raised, as I consider that the voluntary hospitals are very well equipped and very efficient, even having regard to the requirements of the present day.

As to Mr. Groves's proposal to scrap existing city hospitals and build new ones in the country—for many patients treatment in a country hospital with open-air wards is, of course, clearly indicated; not only is it valuable in all cases of tuberculosis, but also, I understand, in cases of heart disease in childhood, and it is an advantage in the treatment of many forms of chronic disease. When patients require very prolonged hospital treatment, as orthopaedic cases often do, it is also clearly indicated. But I do not think it is necessary that a patient who will only be confined in hospital a few weeks, with a broken leg, or an acute attack of pneumonia, or has required operation for some acute abdominal condition, or comes into hospital for a radical cure of hernia, should be in a country hospital. If it is suggested that as country air is an asset in treatment then even those whose stay in hospital is only short should have it, I would point out that it is such a subsidiary factor in the treatment of these cases as to be really negligible. It is a distinct advantage to have patients in the city hospital, as they are there readily accessible to the visiting staff, to their relations, and to the students. To scrap these city hospitals and replace them by country hospitals seems to me an unnecessary and very regrettable waste of money, which should not be incurred, even if the money to build new hospitals were provided by the rates and income tax, and not out of charity funds.

Certainly hospital extension might with great advantage be carried out by the provision of these open-air wards in country hospitals. Such cases as would materially benefit from treatment in them could be drafted out to them, and thus beds left free for cases suitable for treatment in the city hospital. No doubt if we rebuilt many of our city hospitals we should considerably improve their construction, but really they are too good to be scrapped, even though the sale of their sites, as Mr. Groves suggests, would help in some degree to pay for the erection of the new buildings.

One reason given by Mr. Groves for abandoning the two large hospitals in this city (Bristol), and erecting one hospital large enough to receive all the cases, is that it would allow medical and surgical cases to be segregated into subsections, each under the care of one physician or surgeon; so that there would be departments of orthopaedic surgery, urogenital surgery, diseases of the rectum, the nervous system, and the heart, and so on. I agree that such increased specialization would be an advantage to the patients, for obviously the man who concentrates on the diseases of one region of the body, if he has sufficient cases to give him a wide experience, is able to make better diagnoses and provide better treatment than one with a less specialized knowledge. But the question is, Would this system work? The difficulty would be that when medicine and surgery had been subdivided into all these sections, and every physician and surgeon transformed into a specialist in a subsection, a city of the size of Bristol (or even a larger one) and its surrounding

area might not supply enough cases of these special affections in private practice for these very numerous specialists to make a sufficient income. If it is suggested that this difficulty would not arise, because in future all members of the staff would be paid a sufficient salary for their hospital work by the State or municipality to make them independent of private practice, then the question will come, How are the members of the community who can pay for their treatment by these specialists to obtain their services? Is it proposed that they should become wholly Government officials, undertaking both hospital and private practice for their State salary, so that in future the public would only have the services of hospital specialists as paid State officers?

I think it is quite clear that a physician or surgeon taking over the charge of one of these new departments must devote his whole time to that line of work. A surgeon in charge of, say, a genito-urinary department, in which were treated all such cases in a large city, would have to devote the whole of his hospital work to this department, and hence would have to confine his private work to that line of practice also, for all his hospital experience would only be acquired in that department of work. But what work will be left for the general physician and surgeon to do that will ensure him sufficient private practice? Would he become extinct?

This proposal to break up medicine and surgery into numerous subsections, and its effect on the general physician and surgeon, must also be considered in its relation to the teaching of students. The present plan of clerking and dressing for certain members of the staff would have to be abandoned, for there would either be no general physicians and surgeons, or their supply of cases would be too limited to teach from, as the creation of all these special departments would leave very few cases for the general physicians and surgeons. The student would have to obtain his clinical knowledge by attending all the new departments; but as they would all be working simultaneously he would have a very limited part of his curriculum to give to each. What would be the result on his training? It seems to me that the whole matter needs the most careful consideration.—I am, etc.,

Bristol, July 31st. CHARLES A. MORTON.

SIR,—I have read with great interest in the JOURNAL of July 23rd (p. 131) Mr. Hey Groves's presidential address—his powerful appeal for the better organization, co-operation, and co-ordination of our hospitals, the crying need for their development as one service. I can quite appreciate his impatience with the present system, or want of system, and his irritation at the very serious waste of opportunities.

I have no desire to re-open the controversy as between voluntary and State hospitals, but I cannot help thinking that Mr. Groves has overlooked the report, issued six years ago, of the Voluntary Hospitals Commission. This report drew attention to the points so eloquently stated in Mr. Groves's address, and suggested a system of local voluntary hospital committees and, where necessary, joint committees of these local bodies, for the better organization of the voluntary hospitals of any area. It pointed out that all that was needed was the active and willing co-operation of the hospitals.

A conference with a view to forming such a joint committee for Bristol, Somerset, and Wilts was held in Bristol four years ago, but owing to the attitude of the two Bristol general hospitals the whole scheme aborted. I have no wish to pillory Bristol: I merely mention this instance to show that it is not the voluntary system that is at fault, but the want of vision, the conservatism, the individualism, the parochial spirit of some of the governing bodies concerned.

It is quite possible that the methods to which resort has had to be had to obtain funds for these institutions have fostered the spirit of detachment. If so, local contributory schemes and hospital Sundays, with their wider appeal to the wants of the area and not of any particular institution, should be some remedy for the disease. The more general the practice of promoting hospital funds for the district and not for an institution the better the chance of getting adopted a policy of co-operation.

But I believe that the most powerful force at our disposal to bring about the reforms Mr. Groves calls for is the carefully considered and agreed action of the medical profession in the districts concerned, and this can best be obtained through the organization of the British Medical Association.

If a meeting representative of all the medical men in the district would discuss Mr. Groves's paper, apart from the question of voluntary or State support, would agree on a policy, and would bring it to the notice of all authorities concerned and press it, I have sufficient faith in the power of our profession to feel confident that in the end they would get their way.—I am, etc.,

Bradford-on-Avon, July 27th, C. E. S. FLEMMING.

SIR,—I congratulate Mr. Hey Groves on his bold statement of policy (July 23rd, p. 131).

The change from voluntary to State control has increased the efficiency of the education system. Should the voluntary hospital system suffer a like change, financial resources would be increased. Central control and greater co-ordination might be expected, and an increase in the efficiency of this important national service.

So far the State has been most active in preventive medicine, but it has made inroads into the domain of the voluntary hospital system. It is to be congratulated on the success which has attended its assumption of control in the treatment of venereal diseases.

That the voluntary hospital system has survived so long is a tribute to the excellence of its work, but the time for change is ripe, if only for the reason that shortage of funds is hampering the work.—I am, etc.,

C. GIBSON.

Worthing, July 26th.

SALICIN AND SALICYLATES IN THE TREATMENT OF INFLUENZA.

SIR,—I am sure all general practitioners must be greatly encouraged and inspired by the excellent address of Mr. E. B. Turner before the Metropolitan Counties Branch (JOURNAL, July 16th, p. 93) on the clinical and therapeutical aspects of influenza since 1889, and on treatment by salicin. I have had somewhat similar experiences since 1890, the only difference being that my results were better with sodium salicylate in big doses repeated frequently than with salicin. This may be accounted for by race variability. When at the meeting of the British Medical Association at Edinburgh in 1898 Dr. Lees read a paper on chorea, he mentioned the fact that nearly all his cases in the Great Ormond Street Children's Hospital in London had rheumatic nodules on the hands or feet. The late Dr. Lindsay Steven was sitting next me at the time and I asked him if that was his experience in his Glasgow wards, and he said, "No." On returning to Glasgow we went over a number of cases in the various hospitals and privately, and did not have the same experience. Later in the year we were both in London together, and Dr. Lees verified his statement by showing his cases in Great Ormond Street. Over even the short distance of 400 miles we evidently have these race differences, and this accounts in a great measure for our different experiences.

One of my teachers in medicine was great on salicin in rheumatism, 20-grain doses every two hours. I was not long in general practice till I found that rheumatics responded better to the salicylates than to salicin, and my experience was the same in epidemics of influenza. I agree with Mr. Turner's remarks on ammoniated tincture of quinine and vaccines. In regard to big doses, I have even given 60 grains of sodium salicylate at one dose. This was a common practice of an Edinburgh consultant. The epidemics varied much in type and were characterized by different symptoms: some had rusty sputums from the very beginning, while others had none till later in the disease, and then it lasted for an indefinite period. I saw

with a friend an epidemic in the Midlands of England which was very much worse in type and in mortality than anything I had seen in Scotland. In an epidemic I saw in Barcelona in Spain the type was gastro-enteric, not very severe, and was followed by few sequelae. I think Christison was right when he characterized rheumatism as a form of evaporating malaria or Roman fever, and influenza seems to be similar, since the products of the *Salix alba*, or witch willow, act very satisfactorily in both conditions.—I am, etc.,

James Craig, L.R.C.P. and S.

Glasgow, July 16th.

THE EPIGLOTTIS IN RESPIRATORY OBSTRUCTION UNDER ANAESTHESIA.

Sir,—Mr. H. Mortimer Wharry's account of the epiglottis in respiratory obstruction under anaesthesia (British Medical Journal, May 21st, p. 914) is of considerable interest. In the Journal of August 25th, 1923, Mr. Wharry described in detail a case of epiglottic obstruction of the larynx, in which the patient became "completely cyanosed," "the epiglottis was entirely devoid of cartilage, and was of the consistency of a soft piece of wash-leather. It was lying right over the larynx, and in tight contact with the posterior pharyngeal wall, to which it was adhering by means of sticky mucus. It was thus acting as a valve, permitting a little air to escape from the chest, but none to enter. On hooking the epiglottis forward with my finger the patient took several deep breaths and became quite pink again."

In the corresponding columns of the Journal for February 23rd, 1924, is a contribution on the same subject, entitled "Prevention of death under chloroform anaesthesia," by Lieut.-Colonel F. J. Palmer, R.A.M.C. (Assam). He states therein: "respiration fails first owing to the epiglottis sagging back and occluding the upper aperture of the larynx: forcible attempts at inspiration may lead to its impaction." "I am not prepared to state that all cases of chloroform emergency are due to this cause, but it is my belief that the overwhelming majority (probably 90 per cent.) are. I am of opinion that in every case, during chloroform administration, the respiration fails first, as the Hyderabad Commission stated, but that the interval between respiratory and cardiac failure, in the case of a feeble heart, is so short that the respiratory failure is overlooked and the death attributed to primary heart failure." He states that he made this discovery of obstruction of the larynx by the epiglottis some seventeen years before, and that subsequently, in seventeen years of surgical work under varying conditions, where chloroform was usually the anaesthetic of choice, he never lost a case from respiratory failure under anaesthesia.

As shortly before this I had been present at a case of death from respiratory failure under anaesthesia, I was much interested. A few days later I was looking on at an operation on a tonsillar growth (diathermy). Soon after the gag had been placed in position respiration ceased. The throat was swabbed out, etc., and various expedients tried without effect. Rather diffidently I suggested a digital examination: I found the epiglottis impacted in the larynx, and on this occasion, on being prised up, it flew out with an audible click (this is the only time I have heard it "click" out). It was audible to those close to the patient's head.

Since then I have taken the opportunity, whenever any respiratory trouble arises under anaesthesia and is not immediately overcome, of making a digital examination of the epiglottis. Up to the present time the epiglottis has been found to be the sole cause of the respiratory failure, and, in all, I have now seen eight cases of this type. It has occurred with four different anaesthetists, during abdominal as well as throat operations, during administration of chloroform, and also when nothing but ether had been administered. I am led to believe that many deaths under anaesthesia may be due to this preventable cause.

Two factors appear mainly responsible in my opinion, and result in the actual occlusion: (1) change in the position of the epiglottis, (2) commencing inspiration. The first consists in the epiglottis sagging back, and m result from falling back of the jaw, or the tongue, fr swallowing before deep anaesthesia is completely attaine from relaxation of the extrinsic and intrinsic tong muscles, or from disturbance of the epiglottis duri swabbing. Commencing inspiration completes the m fortune by suction on the epiglottis. In several cases t epiglottis appeared to have been completely "swallowed by the larynx.

The emptiness of the lungs minimizes the chance of t epiglottis being spontaneously freed. A little air m escape from the chest, but none enters. On artificial r spiration no air can be heard passing in and out—a usef and suggestive sign, if somewhat sinister. One is easi led to believe that air is passing to and from the lung when this is not the case.

A striking feature of epiglottic obstruction is the silen of the process. Before anything amiss is noticed t obstruction is a *fait accompli*. There is no sound of acti respiration, no movement of the diaphragm with abdomina excursion, no convulsive effort. The patient goes fro bad to worse, with increasing cyanosis and failing pulse.

Once the obstruction is relieved, provided this is don early, respiration starts immediately. The respirator centre is undoubtedly strongly stimulated at first, and i the obstruction is relieved before the centre has reache the stage of depression no trouble is likely to be exp rienced from this cause. Where artificial respiration necessary oxygen administered alone would, in my opinio be sufficient, as carbon dioxide would not be required a stimulant to the respiratory centre, and in cases whe the centre is depressed would be harmful.

The chief difficulty in freeing the epiglottis is due t inaccessibility. Curved instruments, direct laryngoscop or swabbing may be necessary if digital manipulation fai Pushing the jaw well forward or traction on the tongu will unfortunately not usually free it. The digital metho described by Colonel Palmer is useful. Endotrache anaesthesia rules out the possibility of this type of obstru tion, but may not always be available where an anaesthet is essential, and the obstruction may arise during th anaesthesia before the introduction of the catheter.

Occlusion by the epiglottis may play a part in asphyx neonatorum, particularly the cyanotic variety, and furth investigation in these cases may be instructive.

In considering respiratory failure under anaesthes occlusion of the larynx by the epiglottis appears to hav passed largely unnoticed. In my opinion this type o respiratory failure is more common than is general recognized, and is probably responsible for a considerabl proportion of deaths under anaesthesia.—I am, etc.,

G. H. Caiger, F.R.C.S.Eng.,
Assistant Surgeon, Royal East Sussex Hospital.

St. Leonards-on-Sea, June 5th.

THE DEFINITION OF BLINDNESS.

Sir,—In the issue of May 7th (p. 848) there is a refer ence to the definition of blindness. The matter has com up in Melbourne in very practical form. In the Roya Victorian Institute for the Blind those who are workin are paid the difference in rate between their earnings an what they would have received if they had not been blind The definition of total blindness adopted by the Austra lasian Medical Congress of 1923 was not being able t count fingers at two to three metres and possessing n vision which would assist in an occupation.

It will be obvious that people with vision of 6/60 will b helped considerably in doing their work, even as suppose blind people. Consequently two classes have come int existence, at all events from a scientific point of view those possessing 6/60 vision and those who are total blind. In my opinion the earning capacity of the tw differs considerably.

On the administrative side I do not think the matte is finalized at present, but the issue must be settled soon or later.—I am, etc.,

Melbourne, June 17th. James W. Barrett.

THE GENERAL PRACTITIONER AND ANTE-NATAL WORK.

SIR,—At Edinburgh, the Representative Body resolved:

> That it be an instruction to the Council to consider the Midwives Act, 1918, in the interests of all concerned in ante-natal work.[1]

In moving this I dealt very briefly with the ante-natal problem, only referring, in the order of their importance, to those concerned: (1) the unborn child, (2) the expectant mother, (3) the general practitioner, (4) the public, (5) the certified midwife. It can be proved clearly that none of these are getting anything like a square deal.

1 and 2. The mother and child have to negotiate an entanglement of very inferior, still difficult, red tape before they reach the skilled services of a practitioner in emergencies, not infrequently too late to prevent the calamities most of us are too familiar with.

3. By the public health authorities the practitioner is deemed competent enough to deal with the grave emergencies arising before, during, and following the lying-in period, but is barred from carrying on that very work, ante-natal, by which these grave emergencies might be anticipated, mitigated, or even wholly eliminated. Why do the health authorities fail to co-operate more closely with the modern practitioner only too willing to carry out this essentially preventive work? Why is the general practitioner—competent to do this work, willing, and in a favourable position to influence, not a few, but every expectant mother—excluded from this, his legitimate field of work?

4. Is the attendance of 25 per cent. (usually it is less) of mothers at these clinics, when financial provision is made for 100 per cent. attendance, giving the public a fair deal? Surely not, especially when this low percentage does not include the very poor mothers, the most ignorant mothers, but often the reverse. The profession could demonstrate to the public that a more efficient and fuller service could be provided at the same, or even less, cost, than the services established in many areas without the general practitioner being allowed to participate in any way.

5. From many midwives complaints come of pressure brought to bear upon them to undertake work which is in the sphere of medical practice, involving careful measurements, tests, etc., to arrive at accurate diagnosis.

I write to urge the presentation of the case by the rank and file of the profession to the Council of the British Medical Association, not too fully versed, it seems, in all the facts. The Representative Body means by the above instruction that the Council should press for the amendment of the 1918 Act, without which no advance is possible.

Surely every expectant mother—the poorer, the greater need—is entitled to have briefed for the protection of herself and child, as early in the case as possible, the services of a certified midwife and the medical attendant who will ultimately have to deal with any emergency which may arise?

Access to maternity and ante-natal clinics, and the carrying on of the work there by all those members of the profession practising midwifery, supplemented by following the same ante-natal methods in their own consulting rooms, is the solution.

At the Representative Meeting, on the platform, and elsewhere frequent allusion was made to the increasing menace to the very existence of private practice—not forgetting that this refers to private specialism of every kind as well as general practice—from the increasing number of public clinics and hospitals staffed by whole-time officials. I would add, also, from the increasing use of the so-called voluntary hospitals, by all classes of the public, but to which the private practitioner, unless he is one of the privileged staff, has little, if any, access, except in certain enlightened areas. The remedy must be: "Reasonable access to all clinics and hospitals—save strictly teaching hospitals—for the private practitioner, whether general or specialist, who is competent and willing to co-operate in bringing within the reach of his patient the best facilities for modern treatment."

[1] See SUPPLEMENT, July 30th, p. 57.

This is too formidable a question to discuss further at the moment, but that it is not beyond solution I am convinced, knowing that this principle has been put into practice in this industrial part of Kent (population 140,000) as regards all the voluntary hospitals, the one Poor Law hospital, and also as regards part of the public clinics.

May I take this opportunity of correcting a slight but important misreport in the SUPPLEMENT of July 30th?

I said "*I wished I could agree* with Dr. Martin that if the general practitioner made himself efficient he had the solution of ante-natal work in his own hands"; not that "*I agreed with Dr. Martin.*" I venture to emphasize this by putting it that if one hundred per cent. of practitioners in Dr. Martin's or any other county made themselves one hundred per cent. efficient neither he nor any other medical officer of health could, if they would (?), bring them into this important work, as the Act stands.—I am, etc.,

Dartford, July 25th. M. W. RENTON.

BREATHING EXERCISES WITH MOVING ARMS AND MUSCULAR INHIBITION.

SIR,—May I be allowed to add a small quota to the correspondence on breathing exercises in the form of a reply to Mr. Paramore's letter of March 19th (p. 542)? I plead distance to excuse the lateness of this note.

The simple experiments which Mr. Paramore describes—for example, palpating the pectoralis major muscle during abduction of the arm while lying—do not in my view bear the interpretation which he gives them. He writes: "It is found that with and during the movement, as the pectoralis major is being extended (that is, elongated) *its tone*—its tension—that is, its *state of contraction*, progressively increases." (The italics are mine.) I agree that its tension increases, but it is surely unwarrantable to deduce from this that the "tone increases" or that the muscle is in a "state of contraction." Surely the muscle is simply stretched passively by the movement of abduction of the arm, and hence its tension increases. Similarly we may stretch a slack piece of rope by simple extension and so make it tense; but it does not follow that the "tone" of the rope is different, or that it is in a "state of contraction." I think that this explanation holds in all the examples which Mr. Paramore produces. In the case of the erector spinae the movements are obviously more complicated, and opposing groups of muscles have to come into play simultaneously owing to the varying angles of inclination of the body. Again, in extending the leg the tension of the fascia lata is increased, and it seems to me that on this account also the hamstrings feel more tense.

The arguments adduced by Surgeon Commander Hill in his communication of March 5th appear well founded, and it is reasonable to suppose that in order to support the extra effectual weight of the raised arms, various muscle groups have to keep the thorax and abdomen more rigid than normal, and he claims that the spirometer and *x* rays confirm these statements.

Surely we cannot assume that the effect of raising the arms actively during breathing exercises has the same effect on the thorax as the passive movements in artificial respiration; but Mr. Paramore in his third paragraph seems to make this assumption. In artificial respiration the thorax cannot be actively and more rigidly fixed by contraction of other muscles, as Surgeon Commander Hill rightly claims is the case in active arm raising during breathing exercises.

This explanation of Mr. Paramore's examples, therefore, does not appear to be at variance with the theory of the inhibition of antagonistic muscles. He suggests that this inhibition is the exception, and that active participation of opposing muscles is necessary for co-ordinated movement. The co-ordination may reasonably be explained on Hunter's theory of the sympathetic innervation of striped muscle.

According to Hunter (BRITISH MEDICAL JOURNAL, vol. i, 1925) postural tone is due to contractile tone (somatic nerves) and plastic tone, which is provided by non-medullated sympathetic nerves, innervating the "fixing" muscle fibres. On voluntary movement there is inhibition

of this postural tone; the new position is taken up by contractile fibres, and then the fixing fibres supply plastic tone to assist in maintaining the new position. This plastic tone is present not only in the muscles actively producing the posture, but also in the antagonistic muscles; and it is reasonable to suppose that there is more inhibition of contractile than of plastic tone in opposing muscles. Compared with the state of affairs in the moving muscles (where over-contractile tone is very obvious), there is relatively a preponderance of plastic tone over contractile tone in the antagonistic muscles. But this plastic tone in these muscles will not be evident (as is a contraction) on palpation by the hand. Co-ordination is thus provided; but the explanation of the tense feeling in Mr. Paramore's examples is as I have outlined above.

The evidence for the reflex inhibition of antagonistic muscles is weighty, and a disturbance of this function and corresponding failure of co-ordination is more likely to be the explanation of the phenomena of the diseases mentioned by Mr. Paramore than an active contraction of opposing muscles normally.—I am, etc.,

ROBERT J. GITTINS, M.D.

Friends' Hospital, Itarsi, C.P., India.

Obituary.

SIR BRYAN DONKIN, M.D., F.R.C.P.,

Late Physician to Westminster Hospital and a Commissioner of Prisons.

WE announced with much regret last week the death, on July 26th, at his house in London, of Sir Bryan Donkin, at the age of 82. He had been in good health until comparatively recently, when his vigour began to fail.

Horatio Bryan Donkin was the son of a civil engineer. He was born at Blackheath, and there went to school. He entered Queen's College, Oxford, in 1862 as an open scholar and took a first class in Greats (classical). He attended St. Thomas's Hospital and took the M.B. degree at Oxford in 1873. He proceeded to the M.D. in 1893, and was elected F.R.C.P. in 1880. He at first settled down in practice as a physician in London, and became attached to the Westminster Hospital (where he was lecturer on medicine) and to the East London Hospital for Children, Shadwell. He lectured also on medicine at the London School of Medicine for Women. On his appointment to be a commissioner of prisons and director of convict prisons he resigned these clinical appointments, and was appointed consulting physician in both instances. During his connexion with the prison service he was a member of the visiting committees at the Borstal institutions; of the Royal Commission on Control of the Feeble-minded (1904-8); and of several departmental committees appointed by the Home Office. When he retired from the directorship he was appointed medical adviser to the Prison Commission. Afterwards he lived in retirement in London, but continued to take keen interest in matters relating to criminology and mental disease. He gave a course of lectures at the Maudsley Hospital on mental defect and criminal conduct, and delivered the Harveian Oration of the Royal College of Physicians in 1910, taking as his subject "The inheritance of mental characters." He received the honour of knighthood in 1911.

He was a frequent writer of articles, not only in the medical and psychological press, but also in the monthly reviews, and made many contributions to the *Times*. He took an active interest also in the prevention and treatment of venereal disease, and was one of the founders of the Society bearing that name. He held strong personal views on the subject, and did not always see eye to eye with some of his colleagues in the society. He was for a good many years a member of the British Medical Association, but never took an active part in its affairs. He was also an honorary member of the Royal Medico-Psychological Association.

Donkin, during early middle-life, and indeed beyond, was very well known in London, both to the profession of medicine and to biologists. In association with his friend Sir E. Ray Lankester, he was active in the investigation, and on some occasions in the exposure, of spiritualistic methods. Intellectually in this matter, as indeed in others, he was fearless and was not afraid to go where his observations and conclusions led him. The controversy had rather died down, but at the time to which we refer it was burning fiercely. Donkin was a clubable man; he was particularly fond of the Savile Club, and followed his fortunes from Savile Row to Piccadilly.

Donkin married rather late in life, his first wife being a Polish lady. After her death he married again, an American lady, the widow of Mr. Isaac Bates of Belfast.

CHARLES CREIGHTON, M.D.

CHARLES CREIGHTON died on July 18th in the country village of Upper Boddington, Northamptonshire, to which he retired some years ago. He was born at Peterhead in 1847, graduated M.A. Aberdeen in 1867, studied medicine at Aberdeen, Edinburgh, Vienna, and Berlin, and received the degree of M.D. from his own university in 1878. For four years he was occupied with research on cancer for the Medical Department of the Local Government Board, and thereafter was demonstrator of anatomy at Cambridge for five years, taking the degree of M.A. (King's College) in 1880. He settled in London in 1881, and for the remainder of his life was largely occupied in the study of epidemiology and the preparation of books and numerous papers on subjects belonging to that department of science.

The death, in his 80th year, of Dr. Charles Creighton should excite emotions of pride, shame, and sorrow in members of his profession; pride in his scholarly achievements, shame that his colleagues never paid him the tribute of respect willingly conceded to far smaller men, sorrow that what Johnson would have called the anfractuosities of his character, if they did not excuse, partly explained the cold hostility with which he was almost universally treated. Creighton was a voluminous writer, but it is practically certain that he will be remembered for two works. His translation of Hirsch's *Handbook of Historical and Geographical Pathology* for the New Sydenham Society secured him the kind of immortality gained by, say, Tieck and Schlegel or North—namely, that earned by those who have made really available to foreigners the original text of an epoch-making work. His *History of Epidemics in Britain* admits him to the circle of great original writers, and is in the strict sense of the word, a classic. The admirable literary style of this work can be appreciated by any educated reader; to assess its scholarship requires some independent experience of the subject matter. I have worked over a small part of the field and never detected any error of fact. But Creighton's historical scholarship was greater than is implied even by minute accuracy in citation and power of focusing the data. Anybody who studies the medical writers of the eighteenth and earlier centuries with a serious intention of understanding them eventually realizes that a great deal more is needed than mere study of the texts, that it is necessary to acquire a new sense of intellectual values by reading the books—particularly the Latin versions of the most popular works of Galen and Hippocrates—with the teaching of which the older epidemiologists were saturated. Although Creighton makes no parade of erudition it is obvious enough that he had taken these pains, and could, in the stock phrase of the *Arabian Nights*, both read a letter *and understand* it. He was wholly free from the neocentric error of supposing that because a writer of the seventeenth or eighteenth century uses words which, used as *we* use those words, seem nonsensical he was therefore writing nonsense. This was a great merit, a fine quality in an historical writer; but as Creighton had, like all other men, his share of human frailties, this very virtue betrayed him into a fault which his contemporaries had not generosity enough to forgive. The fault was that, while he tried to do justice to the past and succeeded in that aim, he never tried to do justice to the present. He despised the pseudo-historian who awards praise or blame in accordance with the extent to which the opinions or descriptions of the old writer can

"identified" with those of modern idols of the market place. His reaction was either to ignore wholly or to mention with cold contempt those lines of thought and research which his own contemporaries highly prized. He acted in the spirit of the epigrammatist who said that whatever is generally believed is necessarily false. Contempt is more wounding to one's vanity than vehement attack. This habit of mind, together with the inevitable exploitation of his scholarship by one party to an acrimonious dispute, will explain the practical ostracism of Creighton. A very small number of Englishmen openly recognized him as the most learned epidemiologist we have ever produced; some others borrowed from him without acknowledgement or even affected a certain superiority; to most he was just Creighton the antivaccinator and—what more is there to be said?

Although Creighton will surely live as an epidemiologist, he seemed to value himself far more upon his microscopic work. I met him several times some twenty years ago in his friend Professor Bulloch's laboratory, and remember that he used to speak lightly of the amount of ability required for literary research in comparison with the demands made by work in the laboratory. But his literary conversation was fascinating. Those of us who gathered round Bulloch's tea-table will remember Creighton's brilliant solutions of literary puzzles. He had solved, or thought he had solved, most of the problems of literary identification. I recollect a particularly neat identification of the "four beasts full of eyes before and behind" of the Apocalypse: one stood for Isaiah, another for Jeremiah, another for Ezekiel, and the last for Daniel. Very likely—I am no judge—his pathology and his literary criticism may have been amateurish, but he was quite certainly something much bigger than a technical expert; he was a scholar and a gentleman.

It was rather hard to explain to Continental scholars, who had a habit of assuming that Creighton was one of our great men, that the practical British mind could not take an antivaccinator seriously; they might actually suggest that such heterodoxies were of no more relevance to Creighton's work than Virchow's political alarums and excursions detracted from his scientific position! A dead man does not offend the herd instinct any more. Let us hope that now all will read the *History of Epidemics in Britain*.

M. Greenwood.

ALEXANDER CAMPBELL, M.D., F.R.C.S.Ed.,
Dundee.

We regret to record the death of Dr. Campbell, on July 10th, in his 86th year. He graduated at Aberdeen in 1865, settled in Dundee in 1870, and before long was appointed surgeon to the Royal Infirmary there. In the *Edinburgh Medical Journal* of July, 1874, he reported one of the earliest British cases of successful nephrectomy, a cystic tumour provisionally diagnosed ovarian being found to proceed from the lower pole of the kidney; the kidney and tumour were removed together. After ten years' service Dr. Campbell was appointed consulting surgeon, and he was several times a member of the board of directors. He was certifying factory surgeon and surgeon to the Post Office.

He was keenly interested in public affairs, and served as surgeon-major of the Rifle Volunteers. In 1901 he was president of the Dundee Branch of the British Medical Association. He is survived by his elder son, Dr. A. Sydney Campbell, and by a married daughter, to whom we desire to express our sympathy.

Medical Notes in Parliament.

[From our Parliamentary Correspondent.]

On July 29th, before Parliament adjourned for the Recess, the Royal Assent was given to the Diseases of Animals Act, Poor Law Act, Midwives and Maternity Homes (Scotland) Act, and other statutes, including the Finance Act and the Trade Disputes and Trade Unions Act. The House of Lords and House of Commons will both reassemble on November 8th. The Unemployment Insurance Bill will come before the Commons for second reading on November 9th. The Mental Deficiency Bill and the Nursing Homes (Registration) Bill are awaiting consideration by the Commons on report, and both should become law before Christmas.

The Scottish Board of Health.

Housing.

On the Estimates for the Scottish Board of Health, Mr. Adamson and other members discussed housing difficulties. Mr. James Stuart thought that the Government should accelerate its building programme in Scotland and compel slack local authorities to hasten. In Glasgow 277,000 people were living in overcrowded conditions according to the Scottish standard that three persons or more per room was overcrowding. The results were respiratory diseases, tuberculosis, measles, and whooping-cough. Three children died of tuberculosis in the overcrowded areas of Glasgow for one in the well-to-do residential part. From measles the proportion of deaths was five to one, and from whooping-cough seven to one. Even in the new houses 28 per cent. of those who had come from the slums were living in overcrowded conditions. The number of houses required in Glasgow in 1919 was 57,000; to-day 107,000 were needed. In 1909 13,000 Glasgow houses were insanitary; to-day not fewer than 20,000. Dr. Elliot said the Scottish Board of Health was not responsible for policy. Reviewing the health of the country, he said that the death rate from all forms of tuberculosis per 100,000 of the population in Scotland fell from 110 in 1925 to 99 in 1926, and the rate for deaths from non-pulmonary tuberculosis from 110 to 95. Compared with 1916, 1,744 fewer people died in Scotland during 1926 from pulmonary tuberculosis and 1,071 from non-pulmonary tuberculosis. Beds reserved for treatment of tuberculosis were now 4,339, compared with 4,170 at the end of 1925. Infant mortality in 1926 was 83 per 1,000, or 8 less than the rate in 1925, and 13 less than that for the preceding ten years. It was the lowest rate on record except that for 1923, despite last year's unemployment and depression in the coal trade. He agreed there was a high death rate in the crowded areas, but that could not be attributed only to one factor. It was also correlated to the low rate of nourishment. In Dundee, an overcrowded city, infantile mortality was lower than in Aberdeen. Mr. Stewart, intervening, said that in the Rose Street district of Glasgow the infantile death rate was 235 per 1,000 children born, against an average for the city of 107, and that the rate for the congested districts remained practically steady. Dr. Elliot said that this year to the beginning of July houses had been built to meet the whole of the year's housing requirements for Scotland—practically 10,000 houses. He hoped another 6,000 would be built before the end of the year.

Highlands and Islands Medical Service.

Mr. Macpherson referred to the Highlands and Islands Medical Service Fund, drawing attention to the fact that it was still at the pre-war figure of £42,000. The Highland doctor did splendid work, often for a miserable fee. He asked whether the attention of the Secretary for Scotland had been drawn to the appeal by the medical officers for the establishment of a superannuation fund. The local doctor in remote parts should be guaranteed a house or the site of a house. Last year the Board of Health had caused three houses to be built for doctors. That was well worth doing.

Dr. Elliot said the Highlands and Islands Fund had an accumulated balance out of which the Board of Health was drawing between £18,000 and £20,000 a year. By 1928 or 1929 that balance would be exhausted, and the Secretary for Scotland would ask the Treasury for an increase in the sum given for medical benefits to the Highlands and Islands. An occasion for this approach would be found in the reconstitution of the fund, which had been recommended. The vote for the Board of Health was carried.

Scottish Prisons.

On a subsequent vote for Scottish prisons some protests were made about the sending of persons to prison for minor offences. Sir John Gilmour, in reply, said that Scotland admittedly lagged behind England in the use of probation, but the Scottish Office was investigating the problem, and he hoped progress would be made. Prison administration, particularly at the new prison in Edinburgh, was an advance on anything previously seen. This vote was also carried.

Public Education in Scotland.

On the vote for public education in Scotland, Mr. Maxton remarked that Glasgow had to be responsible for two-thirds of the physically defective and two-thirds of the mentally defective children in all Scotland; this, he argued, showed that a high percentage of Glasgow children were in social conditions which tended to make them defectives. The debate was adjourned.

Insulin.

Answering Mr. Forrest, Mr. Chamberlain said insulin was not a curative agent in the ordinary sense. No statistics were available of the number of persons who had received insulin treatment, nor was it possible to ascertain in how many cases the administration of insulin had contributed to the cure of diabetes.

Prospects of Insurance Legislation.—Mr. Neville Chamberlain states that as soon as consideration of the recommendations of the recent Royal Commission on National Health Insurance has been completed, the Government hopes to introduce the necessary legislation, and the question of the compulsory insurance of share fishermen, both in England and Scotland, in so far as they are not already included in the scheme, would be dealt with in such legislation.

Sickness and Maternity in Prisons.—On July 28th Sir William Joynson-Hicks announced that 98 persons were removed from prison during 1926 under Section 17 (6) of the Criminal Justice Administration Act, 1914, for surgical or medical treatment which could not be given in prison. The number of cases of childbirth in prisons (including two in the Aylesbury Borstal Institution) during the same year was 18. The corresponding figures for Broadmoor were none and one. Sir John Gilmour announced on the same day that 31 prisoners were removed from Scottish prisons to outside hospitals during the year 1926 for the purpose of undergoing operations. No births took place in Scottish prisons in 1926.

Opium Cultivation in Indian States.—The recent conference at Simla on opium cultivation in the Indian States has recommended that a committee be formed to conduct local inquiries in which the States concerned would be associated. Earl Winterton gave the House of Commons, on July 28th, the suggested terms of reference for these inquiries, which included the extent to which opium is consumed, the occasions on which and the purposes for which it is consumed, the manner in which it is prepared for consumption, and its physiological effects upon the consumer. He added that the question as to the extent to which opium is administered to infants was not lost sight of by the Simla conference.

Mental Condition after Encephalitis.—Mr. W. Baker asked the Home Secretary for information on the case of a Manchester telegraphist who, at the beginning of last October, was certified to be suffering from encephalitis lethargica. On June 13th he was missing from home, and his description was circulated by the police. Subsequently he was charged at Longton with sleeping out, and was sentenced to a month's imprisonment without remand or police inquiry. The Home Secretary said the man was found by the Longton police asleep on a haystack with a filled pipe and matches. In court he gave no information about himself. The prison doctor sent the man to hospital and made a special report that he was probably suffering from encephalitis lethargica. The prison governor sent this report to the Home Secretary, who immediately arranged for the man's release, and he was released on June 25th. The action of the prison doctor showed that the care which was desirable was exercised in these cases.

Notes in Brief.

The Home Secretary has stated that in the first six months of 1927 there were more than 5,700 prosecutions in the Metropolitan police district for noise from motor vehicles. He had instructed the police that they must do their utmost to stop noise, either of motor cycles or of motor cars.

Up to the end of June 7,222 two-roomed houses and no single-roomed houses had been built in Scotland since 1919 with State assistance. The numbers built without State aid are very small.

The Preservatives in Cream Regulations apply to substitute or "reconstituted" cream equally with genuine cream.

The Home Secretary is considering with his Health Advisory Committee the proposal for a further investigation into dust dangers and tuberculosis among slate quarrymen. Inspectors of the Home Office have taken up with the slate quarry owners the question of improving conditions.

The Government will accept a recommendation that legislation raising the school leaving age to 15 years, from September, 1932, should be passed immediately. By-laws so raising the age in Carnarvon and Suffolk have been approved. Plymouth and Cornwall have asked approval for similar by-laws.

No source of infection has yet been discovered in the recent outbreaks of foot-and-mouth disease in Kent.

The population of England and Wales at the middle of 1927 is provisionally given by Mr. Chamberlain as 18,763,000 males and 20,440,000 females. Sir John Gilmour gives the figures for Scotland (1927) as 2,353,500 males and 2,541,200 females.

The Dental Benefit Joint Committee is considering whether a panel dental patient has the right to choose the anaesthetic to be used in his case.

The Health Ministry now has 642 inspectors, as compared with 407 employed in 1914 by the Local Government Board and the National Health Insurance Commission for England. The Scottish Board of Health has 90 as compared with 36 employed by equivalent departments in 1914.

Universities and Colleges.

UNIVERSITY OF CAMBRIDGE.

MR. H. L. WILSON, M.A., M.B., B.Chir., Emmanuel College, has been elected to the E. G. Fearnsides Scholarship, of the value of £100, for the encouragement of clinical research in organic diseases of the nervous system.

UNIVERSITY OF LONDON.

Matriculation Examination.

AT the June matriculation examination there were 193 successful candidates in the first division and 975 in the second division; in addition 37 took the supplementary certificate for Latin.

KING'S COLLEGE HOSPITAL MEDICAL SCHOOL.

The following awards have been made:—Raymond Gooch Scholarships: T. S. Cave, R. D. Harding. Burney Yeo Scholarship: W. E. S. Merrett. Burney Yeo Exhibitions of £60 each: H. W. Davies, J. G. Sleigh, F. E. Pilkington. Epsom College Scholarship of £60: G. H. Bateman.

LONDON SCHOOL OF HYGIENE AND TROPICAL MEDICINE.

The following students have successfully passed the school examination at the termination of the eighty-second session (March–July, 1927):

*R. Aird (winner of "Duncan" medal), *E. C. Smith, *K. C. Yeo, *W. N. Greer, *W. B. A. Moore, *J. V. Landau, *J. H. Oonvala, *K. Lindberg, *E. M. Rice, *E. Ho Tung, *G. L. Alexander, *C. Bacon, *C. S. James, *R. C. Mahajan, *G. W. St.C. Ramsay, *F. L. G. Selby, *D. Whitbourne, *E. M. Bird, *B. G. T. Elmes, *C. E. Sharp, *C. R. Steel, *J. W. Winchester, *J. Williamson, *M. B. D. Dixey, *F. J. Kolapore, G. T. G. Bovce, D. E. Iago-Jones, R. A. Pallister, H. C. E. Chantler, I. M. Dunlop, R. Le Clezio, L. Sanders, S. Madwar, R. P. Crawford, A. L. Forbes, E. Jobson, F. M. Purcell, I. D. Ramsay, F. V. Small, D. M. Brown, L. H. Thomas, H. O. Hopkins, J. F. M. Hammacher, S. J. Eapen, D. V. Latham, H. H. Salem, R. N. Hall, R. K. Phillips, W. C. Smith, T. W. Ware, G. Napier, J. K. Manson, W. F. Knobel, G. Taylor, A. A. Razzak, L. H. Poh.

* Passed with distinction.

ROYAL COLLEGE OF PHYSICIANS OF LONDON.

AN ordinary comitia of the Royal College of Physicians of London was held on July 28th, when the President, Sir John Rose Bradford, was in the chair.

The minutes of the Censors' Board were read and confirmed.

Membership.

The following candidates, having satisfied the Censors' Board, were admitted Members:

Murray McCheyne Baird, M.B Oxf., Henry Thompson Barron, M.D. Lond., L.R.C.P., Charles Paton Blacker, M B.Oxf., L.R.C.P., Verros Hofmeyr Brink, M.B.Oxf., L.R.C.P., Eric Barrington Brooke, M.B.Camb., L.R.C.P., Hugh Pudsey Dawson, M.B.Camb., L.R.C.P., Robert van Buren Emmons, M B.Oxf., Ernest Tertius Decimus Fletcher, M.B.Camb, Alexander Wilson Gill, M.D.Edin, Katherine Annis Calder Gillie, M.B Lond., James Alison Glover, O.B.E., M D.Camb., John Gerald James Green, M.B N.U Irel, Alice Evelyn Beryl Harding, M.B.Oxf., George Augustus Hardwicke, M.B.Sydney, John Angell James, M B.Bristol, John Wilfrid Joule, M B.Lond., L R.C P., George Hugh Kidd Macalister, M D.Camb., L R.C.P., Douglas Hamilton MacLeod, M B Lond., L.R C.P., Greer Edmund Malcomson, M.D.Lond., Lieut.-Col., I.M.S., Alexander Kempthorne Miller, L.R.C.P., Jessie Laird Robb, M.B.Birm., L.R.C.P., Wilmot Samarasinghe, L.R.C P., Ronald Edward Smith, M.B.Camb., L.R.C.P, Claude Alexander Taylor, M P.Otago, John Henry Miles Walker, M.B Lond, L.R.C.P., Edwin Charles Warner, M.B.Lond., L.R.C.P., Henry Leonard Wilson, M.B.Camb., L.R.C.P., John Greenwood Wilson, M.D Lond, L.R.C.P.

Licences.

Licences were granted to the following 179 candidates, who had passed the recent Final Examination in medicine, surgery, and midwifery of the Examining Board in England:

S. I. Abrahams, *Florence A. Adam, *Florence M. Allen, N. H C Allen, V. F. Anderson, J. H. Attwood, *Grace L. Austin, Ilahi Bakhsh, D. S. M Barlow, W. V. Beach, A. C. H. Bell, J. F. Bell, *Constance M. H. Bishop, W. Blayney, O. Bodo, J. A. F. Bouloux, J. L. Boyd, A. H. Brockbank, W. G. Brookes, W. H. Brown, S. G. Budd, D.B W. Burbury, J. K Cameron, D C. Carroll, *Margaret B. Carter, J. T. Chesterman, F. H. Chick, M. Cohen, C. R. Cooke-Taylor, S. Craddock, L. H. Crosskey, J. N Cumings, *Constance M. Cusden, *Alva A. Daniell, T. S. Daniels, P. McL. Davidson, E L. Davies, W. A. Davies, S Deaner, H. G. de Silva, C. I. D'Netto, C. W. L. Dodd, G. C. Dorling, *Doris V Douglas-Norman, P. J. Dowling, *Helen L. Dunn, D. E Dunnill, *Evelyn Durrance, G. A. Easen, T. Edmunds, *Jessie Edwards, J. A. Edwards, R. W. Eldridge, A Erian, M. R. Ernst, *Muriel F. M. Evans, *Margaret C. Falconar, H. W. Fell, G. S. Ferraby, J. Fitzsimons, F. Forty, H. L. Fuller, C. E. Gallagher, J. C. Gent, R. C. D'A. Gifford, F. H. Gillett, R. V. Goodliffe, L. C. Griffin, C D. Gun-Munro, P. E T. Hancock, H. Hannesson, *Alma B. Hardy, L. I. Hardy, *Eunice M. Hatch, J. E. Hegeart, G. B. M. Hegge, C. Hill, H. Hillaby, *Phyllis N. Hooper, M. K. Hussein, P. Inwald, A. Ismail, P. R. Jackson, H. E. James, H. M. Jaques, J. L. G. Jenkins, A. M Jones, D. N. R. Jones, *Lily A. Jörgensen, P. Kaplin, E. R. Keeble, *Caroline M. Kingsmill, A. König, O. L. Lander, D. A. Langhorne, G. Lee, J. A. Lee, F. G. Leslie, C. A. Levy, *Olive H. Lister, F. E. Lomas, L. P. McBrien, R. A. McCance, J. McHugh, M. S. Mahmood, R. Maneschewitz, *Muriel M. Manley, E. W. Martindell, T. E. Matthews, K. S. May, *M. Y. May, F. J. Mayne, T. W. Morgan, V. V. Morgan, E. G. Muir, J. B. Murray, *Ethel E. M. Ogilvie, R. Oliver, R. O'Meara, A. E. Pain, W. Panes, *Dulcie J. Peake, T. Pearse, M. V. P. Petris, E. U. H. Pentreath, *Mary E. Percy, R. F. Phillips, J. R. Pierre, M. W. Platel, O. Plowright, A. D. Polonsky, W. H. D. Priest, G. W. Rake, W. Ralston, H. L. Rees, J. R. Rickett, L. T. Ride, *Muriel Rippin, *Margaret A. Ritchie, E. H. Roberts, *Phyllis M. Robottom, E. Saforwerth Rosser, M. Rothkopf, H. Royle, J. E. Saville, D. P. H. Schafer, N. T. H. Schafer, H. Schneidin, R. H. Scott, G. S. Seed, C. W. Shaw, N. L. Shepperd, F. C. Simpson, B. D. Sindhwani, *Hilda W. Slack, *Eileen R. B. Snow, P. A. M. Soutter, *Dorothy Taylor, V. J. M. Taylor, R. G. Thomas, E. C. Till, R. H. Tootill, H. A. Tracey, *Winifred M. Turner, S. Tyagaraja, K. S. A. Venkatachala Ayyar, A. D. Versteegh, F. L. H. Voller, *Joan B. Walker, E. Ward, E. N. Wardle, A. G. Watkins, P. H. Whitaker, *Margaret A. Willcox, F. C. Wilson, W. M. Wilson, J. Wooff, R. L. Wynne, H. Yousri.

* Under the Medical Act, 1876.

Diplomas.

The diplomas indicated were granted jointly with the Royal College of Surgeons to the following successful candidates:

PUBLIC HEALTH.—R. F. Beatson, Elizabeth Bird Marion Bow, C. E. W. Bower, C. H. Budge, S. C. Chopra, N P. Dalal, C. J. Donelan, Doris L. Durie, W. C. Harvey, N. M. Hodivala, A. Y. Ibrahim, J. S. Kanadia, Dorothy F. McIntosh, M. S. Mahmood, J. P. Marden, Doris I. Mars, J. N. Mehra, T. C. St.C. Morton, S. G. Nashikkar, Margaret M Nolan, Esther Novinsky, R. S. Ralph, H. Ratnarajah, J. L. Stuart, E. V. Suckling, Elsie Thomson.

LARYNGOLOGY AND OTOLOGY.—M. O. Abdeen, J. B. Baird, J. Bernstein, O. H. C. Byrne, E. E. Day, E. W. Gutteridge, D. R. Macgregor, R. M. Savege, W. McE. Snodgrass, G. E. Tremble, Mary A. Wiles, W. C. S. Wood.

OPHTHALMIC MEDICINE AND SURGERY.—A. S. Anderson, M. A. H. Atiya, J. Biggam, Catherine McL. Buchanan, W. B. Clipsham, A. G. Curzon-Miller, Edith Hatherley, E. F. King, V. M. Métivier, F. J. B. Miller, J. H. Moorhouse, W. M. Muirhead, W. D. O'Donoghue, W. J. Robertson, G. Singh, R. G. Stott, S. E. Ward, J. R. Wheeler, M. Yuille.

PSYCHOLOGICAL MEDICINE.—S. M. Coleman, G. F. Graham, F. H. Healey, S. Hillier, E. G. Howe, W. McCartan, Doris M. Odlum, T. Paton, F. E. E. Schneider, F. L. Scott, G. N. O. Slater, T. Tennent.

Election of Officers.

The following officers were elected:—*Censors*: Sir Edward Farquhar Buzzard, K.C.V.O., M.D., Frederick John Poynton, M.D., John Walter Carr, C.B.E., M.D., Arthur Philip Beddard, M.D. *Emeritus Treasurer*: Sir Dyce Duckworth, Bt., M.D. *Treasurer*: Sidney Philip Phillips, M.D. *Registrar*: Raymond Crawfurd, M.D. *Harveian Librarian*: T. H. Arnold Chaplin, M.D. *Assistant Registrar*: Robert Oswald Moon, M.D.

Sir Hugh Kerr Anderson was elected a Councillor in the place of Dr. J. H. Sequeira, resigned.

Harveian Orator and Lecturers.

The President announced that he had appointed Sir Humphry Rolleston to deliver the Harveian Oration in 1928, and the Registrar reported the following acceptances of appointments: Dr. G. F. Still as FitzPatrick Lecturer for 1928, Dr. J. S. Collier as Lumleian Lecturer for 1928, Dr. E. P. Poulton as Oliver Sharpey Lecturer for 1928, Dr. H. H. Dale as Croonian Lecturer for 1929, Dr. T. Izod Bennett as Goulstonian Lecturer for 1928.

Moxon and Baly Medals.

On the recommendation of the Council the Moxon medal was awarded to Sir Henry Head, M.D., F.R.S., and the Baly medal to Professor A. V. Hill, F.R.S.

Murchison Scholarship.

The award by the University of Edinburgh of the Murchison Scholarship to Mr. John M'Michael, an undergraduate of that University, was announced.

Various Communications.

Communications were received from the secretary of the Royal College of Surgeons reporting the proceedings of the Council of that College; from the Board of Trade, asking the College to advise them whether a suitable microscope should be part of the compulsory medical instrument equipment of ships that are required to carry a medical officer; from the secretary of King Edward's Hospital Fund for London, asking if the College would desire to give evidence before the special committee of inquiry, called the "Pay Beds Committee." Dr. C. McMoran Wilson and Dr. J. H. Thursfield were nominated.

The Secretary of the Conjoint Examining Board.

A report was received from the Committee of Management of the Examining Board in England stating that it had received a communication from Mr. F. G. Hallett, expressing his desire to retire in December next from the post of secretary of the Examining Board in England. Mr. Hallett was appointed the first secretary of the Board in January, 1886, but had joined the office staff of the Royal College of Surgeons in December, 1877, and had become assistant secretary to the College in 1882; he had therefore completed fifty years of service at the Royal College of Surgeons and the Conjoint Board. On the motion of Sir William Hale-White it was resolved unanimously that an expression of much regret at his resignation and of the great appreciation felt by the College for the ability, zeal, and devotion with which he had carried out his duties for nearly fifty years should be conveyed to Mr. Hallett. The recommendation of the Committee of Management that Mr. Horace Hayter Rew, who has held the post of assistant secretary to the Examining Board for the last seven years, should be appointed secretary as from December 5th, was accepted.

Recognition of Universities and Colleges.

The following institutions and colleges were added to the list of institutions whose graduates in medicine are admissible to the final examinations in medicine, surgery, and midwifery, under the conditions of Paragraph IV, Section III of the old Regulations, and Paragraph III, Chapter III of the Regulations dated January 1st, 1923—namely: The Masaryk University of Brno, Czechoslovakia; the Kornensky University of Bratislava, Czechoslovakia; the Medical College of Virginia, Richmond, U.S.A.; the Meharry Medical College, Nashville, Tennessee, U.S.A.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

AN ordinary Council meeting was held on July 28th, when the President, Sir Berkeley Moynihan, Bt., was in the chair.

Mr. W. Thelwall Thomas was admitted to the Council.

Diplomas and Licences.

Diplomas of membership were granted to 172 candidates. The Licence in Dental Surgery was granted to Eileen Mary Joscelyne. Diplomas were granted, jointly with the Royal College of Physicians, in public health to 27 candidates, in ophthalmic medicine and surgery to 19 candidates.

Board of Examiners.

Mr. J. Lewin Payne was re-elected a member of the Board of Examiners in Dental Surgery.

Lister's Surgical Notes.

The College accepted the custody of Lord Lister's Surgical Notes, which had been offered to the College for permanent loan by the Committee of Management of King's College Hospital, upon the recommendation of the medical board.

Medical News.

APPLICATIONS for the Milroy Lectureship for 1929 are invited by the Royal College of Physicians of London. The lectures must be on some subject in State medicine and public health, and copies of Dr. Milroy's suggestions and further information can be obtained from Dr. Raymond Crawfurd, Registrar, Royal College of Physicians of London, Pall Mall East, S.W.1. It should be noted that applications must be received by the Registrar on or before September 28th, which is earlier than has been usual. Further particulars will be found in our advertisement columns.

THE general secretary, Dr. Hugh Woods, of the London and Counties Medical Protection Society has called our attention to a letter he has addressed, on behalf of the society, to the town council of Ramsgate. It appears that some time ago charges were made against the police surgeon, Dr. A. J. K. Drew, with regard to the manner in which he gave evidence in an inquiry relative to a member of the Ramsgate police force. It is stated that Dr. Drew has not obtained a formal statement of the charges, and that the only information he had as to their nature was given to him at an informal meeting of the Watch Committee. Dr. Drew communicated with the society, of which he is a member, but its solicitors have been unable to obtain particulars of the charges and complaints, and the *Thanet Advertiser* on July 2nd announced that the town council had unanimously resolved in committee to give Dr. Drew three months' notice to terminate his appointment as police surgeon. The secretary of the London and Counties Medical Protection Society, in his letter to the town council, observes that its action, in view of the publicity of the circumstances, is virtual dismissal. The object of the society's letter appears to be to extract from the town council a statement formulating the charges against Dr. Drew, so that he may have an opportunity of an unprejudiced hearing and of a decision given after full investigation.

PROFESSOR ROBERT HOWDEN has resigned the chair of anatomy in the College of Medicine, Newcastle-upon-Tyne (University of Durham), which he has held for thirty-eight years; he has been elected emeritus professor. Professor Howden is well known to medical students as the editor of Gray's *Anatomy*, the last edition of which (the twenty-third) was reviewed in our columns last December. Professor Howden has been the representative of the University of Durham on the General Medical Council since 1918.

AT the annual meeting of the British Spas Federation, which was held at Strathpeffer, a small committee was appointed to develop further research into the chemical and physical properties of the mineral waters of Great Britain. It was decided to take steps to draw attention to the importance of the fullest use of British spas, both from the standpoint of national health and as a means of restoring the adverse balance due to the large English expenditure at foreign resorts.

MR. CHAMBERLAIN, Minister of Health, has, during the temporary absence of Captain Brass, M.P., who is accompanying Mr. Amery on his tour of the Dominions, appointed Mr. Geoffrey Peto, M.P., to be his Parliamentary Private Secretary.

THE fifth gold medal of the African Society, instituted for presentation to those who have done the best work for Africa, has been awarded to Sir Ronald Ross, K.C.B., K.C.M.G., F.R.S.

AT the annual meeting of the Automobile Association it was stated that in little over twenty years it had obtained a membership of nearly 350,000; that it disposed of an income which was not far short of £700,000; and that its services to its members facilitated travel not only in this country but practically throughout Europe. Improved arrangements had been made with Austria, Germany, Norway, Spain, and the Irish Free State. The association continues to press for re-introduction of the petrol tax. In this connexion it has been suggested that the horse power tax handicaps the British manufacturer in foreign trade by preventing the production of cheap high-powered six-cylindered engines, such as are suitable for very hilly countries.

THE fifth International Congress for the Protection of Childhood, held at Madrid in April, 1925, decided that the next congress should be held in Paris in 1928.

The fifth French Congress of Stomatology will be held in Paris, under the presidency of M. Gires, from October 24th to 30th, when the following papers will be read: surgical extraction of teeth, by M. Monier; osteitis of the lower jaw, by M. Gornovec. The following subjects will also be discussed: buccal hygiene of children at school and at home, introduced by M. Tellier; sterilization in stomatology, introduced by M. Fargin-Fayolle. Further information can be obtained from the general secretary, M. Leclercq, 9, Boulevard de la Madeleine, Paris, 1e.

The celebration of the fiftieth anniversary of the French Society of Public Health and the fourteenth Congress of Hygiene will be held at Paris from October 25th to 28th at the Pasteur Institute, with Dr. Roux, director of the institute, as president of honour, and Dr. Léon Bernard, professor of hygiene in the Paris Medical Faculty, as president. Papers will be read by Professor Madsen of Copenhagen on the international organization of public health, and by Professor Dopter, of the Val-de-Grâce Military Hospital, on military hygiene. Further information can be obtained from the secretary, Dr. Dujarric de la Rivière, 26, Rue Dutot, Paris, XVIe.

Letters, Notes, and Answers.

All communications in regard to editorial business should be addressed to ***The EDITOR, British Medical Journal, British Medical Association House, Tavistock Square, W.C.1.***

ORIGINAL ARTICLES and LETTERS forwarded for publication are understood to be offered to the British Medical Journal alone unless the contrary be stated. Correspondents who wish notice to be taken of their communications should authenticate them with their names, not necessarily for publication.

Authors desiring REPRINTS of their articles published in the British Medical Journal must communicate with the Financial Secretary and Business Manager, British Medical Association House, Tavistock Square, W.C.1, on receipt of proofs.

All communications with reference to ADVERTISEMENTS, as well as orders for copies of the Journal, should be addressed to the Financial Secretary and Business Manager.

The ***TELEPHONE NUMBERS*** of the British Medical Association and the British Medical Journal are *MUSEUM 9861, 9862, 9863,* and *9864* (internal exchange, four lines).

The ***TELEGRAPHIC ADDRESSES*** are:

EDITOR of the British Medical Journal, *Aitiology Westcent, London.*

FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate Westcent, London.*

MEDICAL SECRETARY, *Mediseera Westcent, London.*

The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin (telegrams: *Bacillus, Dublin*; telephone: 4737 Dublin), and of the Scottish Office, 6, Drumsheugh Gardens, Edinburgh (telegrams: *Associate, Edinburgh*; telephone: 4361 Central).

QUERIES AND ANSWERS.

Raising a Boot for Short Leg.

Dr. W. D. Hopkins (Hayes, Middlesex) writes: When a boot is to be raised an inch or so I have usually had it done with an extra leather sole, which makes a weighty article for feeble muscles. What inexpensive method can be used to add the least weight?

*** We have referred this question to Mr. E. Muirhead Little, who has been good enough to reply as follows:

When a boot or shoe is to be raised an inch at the heel and not at the tread a piece of cork of that thickness can be fitted inside the shoe, and in such a case it is not always necessary to alter the leatherwork of the shoe. A leather heel of, say, 2 in. (in place of the usual 1 in.) is not heavy enough to matter much, but above that height the weight is important, and cork is preferable. Two inches or even more may be placed inside the boot, but, of course, in that case the boot must be specially made to take it. Larger amounts are placed in whole or part outside the boot, between the welt and the sole. For the sake of appearances part of the cork may be placed outside and part inside the boot. It is only possible to adapt an ordinary boot when the amount of shorteuing to be accommodated is small, say, up to 1½ in. at most. For greater disparity specially made surgical boots are needed. There seems to be no inexpensive method of raising the height of the heel and sole beyond a small amount, but any bootmaker should be able to insert 1/2 in. of cork between sole and welt without difficulty, although he will generally decline the job as being "surgical."

Income Tax.

Three Years' Average.

"J. V. B." claimed, and was allowed as for an expense of the year 1925, £310 as the cost of replacing his car. For 1927–28 he will be assessed on the basis of the 1926 earnings, and therefore will lose two-thirds of the benefit of the renewal allowance. Has he any remedy?

*** The cost of renewal has to be treated in the same way as any other professional expense, and no special claims can be made to set a portion of it against the 1926 profits. If, however, "J. V. B.'s" profits for 1925, as adjusted for income tax purposes, were less than the average earnings of the practice for the six years up to and including 1923—or for such shorter period as he may have been the owner of the practice—he can claim to be assessed for 1927–28 *and* 1928–29 on the basis of the three years' average, in accordance with Section 29 of the Finance Act, 1926–27. His claim must be lodged by October 5th.

LETTERS, NOTES, ETC.

The "Medical Directory."

The Editors of the *Medical Directory* inform us that their annual circular has been posted to each member of the medical profession. Should any form not have reached its destination, they will be glad to send a duplicate. They hope that completed forms may be sent to them at 7, Great Marlborough Street, London, W., by an early post.

Medical Marksmen.

Dr. C. W. Wirgman (London, E.C.) writes: I was glad to see the excellent notice given in the Journal of July 23rd to the victory of Dr. C. H. Vernon at Bisley. It is curious that the medical profession have in the last three years twice occupied the second place and won this year. A very strong team of ten could have been got up from among doctors attending the meeting. The following attended and had a very good meeting on the whole: Captain A. B. Bratton, D.S.O., M.C., Colonel H. D. Brook, V.D., J. Elgood, M. J. Harker, Colonel L. Langford Lloyd, D.S.O., F. H. Kelly, Colonel W. F. McLean, C. Robertson, G. C. F. Robinson, Captain C. H. Vernon, Major C. W. Wirgman.

*** We take this opportunity to correct an error in our note on the King's Prizeman. Dr. Vernon's age is 35, not 45.

Treatment of Varicose Veins by Injection.

Major-General T. M. Corker, A.M.S., draws attention to recent references in our columns to the treatment of varicose veins by injection (February 26th, p. 375, and *Epitome*, March 12th, para. 286) and suggests that some clear statement is desirable as regards the possible danger of thrombosis. He adds that, if there is little risk of trouble from this cause, the advantages of the injection treatment, particularly the avoidance of a cutting operation, and the rapidity with which recovery seems to follow, would render this procedure worthy of more thorough investigation, with a view to its general adoption. He invites comment from those who have had experience of the results of treating varicose veins in this way.

Portugal for the Tourist.

We have received an illustrated pamphlet about Portugal, published by the Sociedade Propaganda, and extolling the beauties of that country in climate, landscape, and watering places. The pamphlet was published in 1916; it has only just reached us, presumably, because, as the preface states, "the functioning of the various services" during the war was "somewhat less regular." It is noted that the political and geographical situation of Portugal, in face of the European conflagration, readily explained the influx of foreigners, who were quietly awaiting an opportunity to return to their own lands. The pamphlet might have mentioned also that the national industry, revolution, is carried on in a gentlemanly manner, with a minimum of bloodshed. We fully agree that the country is admirably adapted for the development of "turism"; and the well known affection of the Portuguese for the English makes it additionally attractive. The illustrations of scenery and buildings in the pamphlet invite the visitor. The address of the Sociedade Propaganda de Portugal in 1916 was Rua Garrett, 103; Lisbon.

Vacancies.

Notifications of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 31, 32, 33, 36 and 37 of our advertisement columns, and advertisements as to partnerships, assistantships, and locumtenencies at pages 34 and 35.

A short summary of vacant posts notified in the advertisement columns appears in the *Supplement* at page *100*.